



Internal Refinance Opportunities for the Tacoma Narrows Bridge

Final Report

Joint Transportation Committee

January 10, 2014

Study Background

Recent increases in the cost of tolls for the Tacoma Narrows Bridge (TNB), and the likelihood that additional toll increases will be needed in the coming years in order to meet bond payment requirements, led legislators to investigate what might be done to reduce future toll rate increases.

With current interest rates at historic lows, some have suggested refinancing the TNB debt in order to lower debt service payments. However, the Office of the State Treasurer (OST) reports that conventional refinancing is not feasible for the majority of bonds issued to finance the bridge, due to the type of bonds that were issued. As a result, refinancing is not an option to reduce future toll rate increases.

Therefore, the Legislature decided to evaluate other options to reduce the burden of toll increases on users of the Tacoma Narrows Bridge. ESSB 5024, Section 204(4) directed the Joint Transportation Committee (JTC) to convene a work group to identify and evaluate internal refinance opportunities for the Tacoma Narrows Bridge. The study was conducted within existing funds by a staff work group, including staff from the Office of Financial Management, the Transportation Commission, the Department of Transportation, the Office of the State Treasurer, and the legislative Transportation Committees. The JTC will issue a report of its findings to the House of Representatives and the Senate Transportation Committees by December 31, 2013.

The term “internal refinance opportunities” in the proviso directing this study refers to changes that do not require the State Treasurer to re-issue debt. This may include identifying non-toll revenue (including gas tax dollars) to help pay costs, reducing costs, and other potential alternatives.

Sources of information

A number of resources were used to compile the following summary of the Tacoma Narrows Bridge, its construction, finance, operations and toll rate history, and to create and evaluate the scenarios’ impacts on potential toll rates. Many thanks to the staff from the Washington State Department of Transportation, the Office of the State Treasurer, and the Washington State Transportation Commission, for sharing their excellent summaries, presentations, reports, spreadsheets, memos, work products and opinions, all of which were considered and used to write this report.

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Executive Summary

Study Process

The 2013 Legislature directed the Joint Transportation Committee (JTC) to convene a staff work group to identify and evaluate internal refinance opportunities for the Tacoma Narrows Bridge (ESSB 5024, Sec 204(4)). The study was to be completed within existing funds.

“(4) The joint transportation committee shall convene a work group to identify and evaluate internal refinance opportunities for the Tacoma Narrows bridge. The study must include a staff work group, including staff from the office of financial management, the transportation commission, the department of transportation, the office of the state treasurer, and the legislative transportation committees. The joint transportation committee shall issue a report of its findings to the house of representatives and the senate transportation committees by December 31, 2013.”

JTC staff prepared a study workplan outlining the study (See Appendix pp 68-69) which was approved by the JTC in May. The approved workplan defined “internal refinance opportunities” as changes that do not require the State Treasurer to re-issue debt, such as identifying non-toll revenue to help defray costs, reducing costs paid by tolls, or other potential alternatives. The workplan called for the staff workgroup to meet three times to review relevant studies and reports, identify potential alternatives, and evaluate their potential to reduce toll increases.

The first meeting of the staff workgroup was July 9, 2013. The study was introduced, including study tasks and schedule. The workgroup discussed a draft white paper outlining the history of the project and its financing and tolling. Workgroup members discussed the development of a scenario estimating tool that WSDOT staff would produce, in conjunction with JTC staff and other workgroup members.

Staff made an initial study presentation focused on the history of the facility and its financing and tolling to the JTC at the July 24, 2013, meeting in Chehalis. The presentation can be found in the Appendix pp 70-73.

On August 5, 2013, WSDOT unveiled the draft scenario estimating tool to the workgroup members, who discussed its components, WSDOT’s assumptions regarding cost and revenue estimates, changes to improve the tool, and caveats that should be stated when the tool results are described.

An August 20, 2013, meeting of the workgroup again focused on the updated scenario estimating tool. WSDOT staff used the model to illustrate its various utilities, and to show how it could develop estimated toll impacts of various expenditure reduction and additional revenue scenarios.

Two meetings were held on September 4, 2013. A morning meeting focused on potential toll operations cost savings, and the operations and maintenance costs which account for 16% of the facility costs. In the afternoon, the workgroup reviewed and manipulated the updated scenario estimating tool, discussed toll caveats and assumptions, potential scenarios to evaluate, and potential effects of a loan from the motor vehicle account on other programs and projects funded from that account. WSDOT agreed to update the tool in accordance with the official September transportation revenue forecast.

A final workgroup meeting was held on September 26, 2013, to review the draft presentation to the Joint Transportation Committee scheduled for October 9, 2013, and to discuss potential impacts on other tolled facilities in the state.

On October 9, 2013, JTC staff presented the study results to the JTC in Tacoma. Those results illustrated that under the current traffic forecast, a blended toll is not likely to exceed \$6.00 through 2030, and that even if traffic fell every year by 0.8% and inflation is double what's currently expected in the official TNB finance plan, the maximum blended toll is not likely to exceed \$9.00. A number of scenarios were presented and discussed. (The presentation can be found in the Appendix, pp 74-79.)

History of the Tacoma Narrows Bridge Financing

In 1993, the Legislature passed the Public-Private Initiatives in Transportation Act (PPI) (RCW 47.46) to create a legal framework for transportation public-private partnerships (P3s). One of the explicit goals of the 1993 law was to build or operate transportation projects without requiring state tax dollars.

The Tacoma Narrows Bridge project was the only project of six to advance from the original implementation of RCW 47.46. Although ultimately a publicly-financed project, its financial structure reflects promises made by the P3 statute and program, namely, the ability to construct projects with few if any tax dollars.

Neither tax revenues nor toll revenues were available to pay debt service during the bridge's five-year construction period (2002 – 2007). This contributed to the decision by the State Finance Committee to finance construction largely with zero coupon bonds. Such bonds pay interest and principal to bondholders only on their maturity – not throughout the life of the bond. The upside to zero coupon bonds was that no revenue was needed for debt service during construction. The downside was that they were relatively costly, non-callable, and could not be refinanced when interest rates dropped.

The assumptions in the original 2002 bridge finance plan drove the debt structure and bond sales to finance the bridge. Both toll rates and net revenues available for debt service payments were assumed to increase over time. The 2002 plan called for tolls to start at \$3.00, and increase by \$1.00 every three years until a maximum of \$6.00 was reached in 2016. Combined with projected traffic levels, the 2002 plan showed that at these rates, tolls were sufficient to pay debt service, sales tax, insurance, and maintenance and operations for the bridge through 2030, when the debt is paid off and tolls are removed.

Actual bridge construction and finance costs were lower than projected in 2002, saving nearly \$300 million in debt service costs through 2030.

- **Construction costs.** The completed project came in \$43.1 million under budget -- \$717.3 million vs. \$760.4 million.
- **Interest rates.** The average bond interest rate was less than projected -- 4.93% vs. 5.85%.

A combination of factors led to lower revenue collections than projected once the bridge opened.

- **Lower tolls than forecasted.** Since opening day, tolls have been consistently below the level assumed in the 2002 finance plan.
- **Lower traffic than forecasted.** Bridge traffic has been consistently below the levels assumed in the 2002 finance plan.

Several steps have been taken to reduce bridge operating costs from original estimates, and to identify additional revenue sources, in an effort to relieve toll payer burden.

- **Operating and maintenance costs (O&M)** through June, 2013 are 17.4% lower than projected in 2002. This is a combination of lower WSDOT, maintenance, enforcement and insurance costs (45% lower), and higher toll vendor costs (29% higher).
- **New revenues sources.** The Legislature identified additional sources of revenues to offset some early costs, including transfers from other accounts, transponder sales, fines and fees and other sources. Through June, 2013, tolls paid 92% of costs compared with a 2002 projection of 99.6%. Today tolls pay 100% of O&M costs, as required by law (RCW 47.46.100), although some WSDOT oversight activities continue to be funded by other fund sources.
- **Refinancing.** The Office of the State Treasurer refinanced the bonds that could reasonably be refinanced, saving \$8.6 million in debt service over the life of the bonds.

Debt service costs will grow from \$45 million in FY 2013, to \$70 million in FY 2017, peaking at about \$86 million in FY 2029.

Exhibit 1 shows the operating and capital sources and uses of funds for the TNB through June 30, 2013, comparing what was projected in the 2002 finance plan to actuals.

Exhibit 1

| Tacoma Narrows Bridge Operating and Capital Sources and Uses of Funds <i>nominal dollars in millions</i> | | |
|--|------------------------------|-----------------------------|
| | July 2013 Financial Plan | July 2002 Financial Plan |
| | <i>Through June 30, 2013</i> | |
| Sources of Funds | | |
| Toll Revenue | \$266.5 | \$366.1 |
| Transponder Sales | 3.3 | - |
| Fines and Fees | 7.3 | - |
| Miscellaneous Revenue | 4.1 | - |
| Gross Bond Proceeds | 684.2 | 726.0 |
| Transfers from Motor Vehicle Account (Capital) | 39.0 | 39.0 |
| Expenditures from Motor Vehicle Account | 11.0 | 11.0 |
| Loan from Motor Vehicle Account | 5.3 | - |
| Transfers from Other Accounts | 1.3 | - |
| Toll Revenue Used for Deferred Sales Tax | - | - |
| Interest Earnings | 10.2 | 12.1 |
| Capitalized Interest | (4.4) | (4.8) |
| Total Sources of Funds | \$1,027.8 | \$1,149.4 |
| Debt Service | (\$207.7) | (\$262.3) |
| Remaining Funds | \$820.1 | \$887.2 |
| Uses of Funds | | |
| Cost of Bond Issuance | \$6.4 | \$7.6 |
| WSDOT Management Costs | 18.2 | 21.9 |
| Toll Systems Operations (Vendor Contract) | 42.8 | 33.2 |
| Insurance | 10.1 | 23.0 |
| Enforcement and Security | 1.4 | 5.1 |
| Maintenance | 1.2 | 6.3 |
| Capital Construction in TNB Account | 717.3 | 760.4 |
| Capital Construction in MVA Account | 11.0 | 11.0 |
| Deferred Sales Tax | - | 9.0 |
| R & R Costs | 0.15 | 0.8 |
| Total Use of Funds | \$808.7 | \$878.3 |
| Ending Balance June 2013 | \$11.4 | \$8.9 |

Source: WSDOT

The Scenario Estimating Tool Developed for this Study

Working with JTC and the staff workgroup, WSDOT staff developed a scenario estimating tool to evaluate a number of “what if” scenarios and their potential impact on toll rates through 2030 and beyond. It is not a rate-setting tool, but allows policy makers to evaluate the relative scale of impacts of various scenarios.

Key elements of the tool include the following, all of which can be modified to evaluate the impact of changes on potential toll rates:

- traffic
- revenues
- expenses
- the sufficient minimum balance required by the Transportation Commission, and
- the blended toll rate.

Traffic estimates. The tool allows the user to evaluate any number of traffic scenarios. For purposes of this study, three traffic scenarios were evaluated:

- the official traffic forecast, based on the official September, 2013 transportation revenue forecast;
- a zero-growth scenario, where traffic is flat through 2030; and
- a pessimistic scenario, where is assumed to fall every year by 0.8%. This -0.8% reflects the average traffic growth on the bridge during the first five years of operation, a period that includes a significant economic recession.

Caveats. In evaluating results of the scenario estimating tool, it is important to keep in mind the following caveats and assumptions:

- the tool does not adjust for elasticity (traffic is not adjusted due to higher or lower toll rates);
- expenses increase at the full inflation rate, not half as in the current TNB financial plan;
- the toll rate is expressed as a blended rate (a weighted average of all toll rates);
- analysis begins with FY 2016 rates, because the Transportation Commission has already set toll rates for FY 2014 and FY 2015; and
- results are rough estimates, suggesting general trends but requiring further analysis for policy decisions.

While a very useful tool without which the study could not have been completed, the scenario estimating tool is not a complex model. Furthermore, it was used to look 17 years into the future, so its results are speculative. By contrast, the Transportation Commission sets tolls one to two years in advance, so that rates are responsive to dynamic economic factors. This allows the Commission to achieve more accuracy and precision when setting toll rates.

Summary of Scenarios

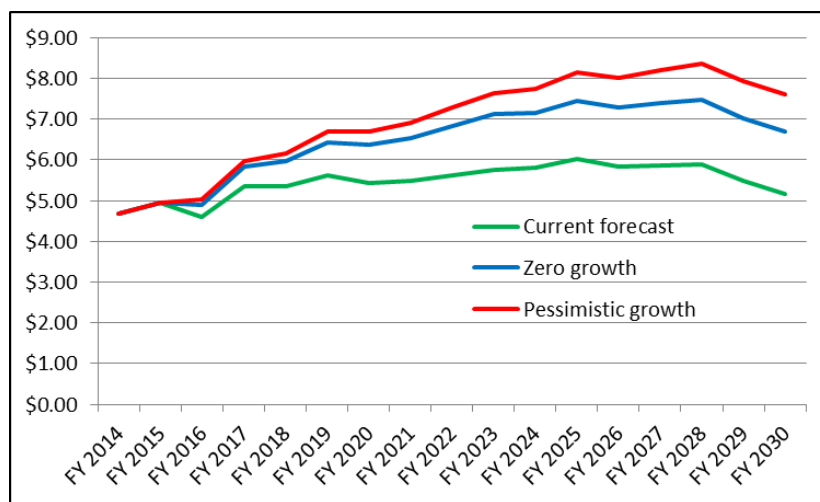
JTC staff used the scenario estimating tool to evaluate a base case and seven scenarios under the three traffic scenarios, as described below.

Base case. The base case reflects a current-law scenario. It illustrates potential toll rates under the three traffic scenarios, assuming tolls pay all costs as in current law, and costs are inflated by the full inflation rate.

Results: Through 2030, under the current traffic forecast, the blended toll is not likely to exceed \$6.00. In the pessimistic scenario, even if traffic fell every year by 0.8% and inflation is double the rate in the current TNB finance plan, the maximum blended toll is not likely to reach \$9.00.

Base case -- Potential estimated blended toll rates

(Full IPD, tolls pay costs as in current law, three traffic scenarios)



- Scenario 1.** A non-toll revenue source pays the deferred construction sales tax.
- Scenario 2.** Effect on tolls of a 5% cut in toll operations and vendor costs.
- Scenario 3.** Effect on tolls if a non-toll revenue source pays preservation costs for the new bridge.
- Scenario 4.** Tolls only pay debt service – effect on tolls and the revenue source that pays the rest of the facility’s costs. Evaluated both as a “gift” from the other revenue source, and as a loan to be repaid by toll payers beginning in 2031.
- Scenario 5.** Loan to keep blended toll below \$6.00, with loan repaid by toll payers beginning in 2031.
- Scenario 6.** Loan to offset the effect of increasing debt service, with loan repaid by toll payers beginning in 2031.
- Scenario 7.** “Worst case” scenario: Is it likely tolls will reach double digits?

The table below summarizes the results of the seven scenarios. It assumes the motor vehicle account is the non-toll revenue source. In all cases, it is the responsibility of the Transportation Commission to set toll rates.

| Scenario | | Potential impact on tolls (reduction from base case) | Potential impact on motor vehicle account | Other considerations |
|-------------|--|--|--|---|
| 1 | The \$58 million deferred sales tax is repaid by non-toll revenues, FY 2019-2028 | 35 – 45 cents | \$58 million, or about \$11 million a biennium | SR 520 deferred sales tax is \$144 million, FY 2022 – FY 2031. If also repaid by motor vehicle account, costs \$201 million, or \$30 - \$40 m/biennium |
| 2 | 5% cut in toll vendor and toll operations budget | 5 cents | | Already enacted in FY 2013-15 budget |
| 3 | Non-toll revenues pay preservation costs of \$26 million through 2030 | 10 - 15 cents on average | \$26 million | Users of other tolled facilities will want similar treatment. |
| 4 “gift” | Tolls only pay debt service – gift from motor vehicle account pays all other costs | \$1.10 - \$1.45 on average, FY 2016 - 2030 | \$276 million FY 2016 – 2030, averaging \$30 - \$42 million/biennium | <ul style="list-style-type: none"> • Users of other tolled facilities will want similar treatment. • Impact on other projects and programs funded from the motor vehicle account |
| 4 “loan” | Tolls only pay debt service; loan from motor vehicle account pays other costs; repayment toll paid 2031-2035 | Same savings as above; repayment toll averages \$3.70 - \$5.75 | \$276 million FY 2016 – 2030, avg \$30 - \$42 million/biennium repaid beginning 2031 | <ul style="list-style-type: none"> • Users of other tolled facilities will want similar treatment • Impact on other projects and programs funded from the motor vehicle account |
| 5 “loan” | Maximum \$6.00 toll; loan from motor vehicle account; repayment toll paid 2031 - 2035 | 80 cents - \$1.30 average savings; repayment toll averages \$3.05 - \$5.00 | \$161 - \$242 million Repaid beginning 2031 | <ul style="list-style-type: none"> • Affects only zero growth and pessimistic traffic scenarios because tolls don’t exceed \$6.00 in current traffic forecast • Users of other tolled facilities will want similar treatment • Impact on other projects and programs funded from the motor vehicle account |
| 6 “loan” | Level debt service beginning in FY 2016; loan from motor vehicle account; repayment toll paid 2031 - 2035 | \$1.00 - \$1.30 average savings; repayment toll averages \$3.10 - \$4.75 | \$231 million Repaid beginning 2031 | <ul style="list-style-type: none"> • Loan from motor vehicle account would offset the effect of escalating debt service • Impact on other projects and programs funded from the motor vehicle account |
| 7 | Likelihood of double digit tolls | Not likely to reach double digit tolls | NA | Extremely unlikely scenarios may result in blended toll slightly above \$10 in the last 1-3 years of debt service payment: <ul style="list-style-type: none"> • traffic falling 2% every year; or • 9% annual inflation; or • 1.5% annual traffic decline plus 5% annual inflation |

**Internal Refinance
Opportunities
for the
Tacoma Narrows Bridge**

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Tacoma Narrows Bridge Project Background and History

Tacoma Narrows Bridge Project History

Project genesis, 1993

In 1993, the Legislature passed the Public-Private Initiatives in Transportation Act (PPI) (HB 1006, codified as RCW 47.46) to create a legal framework for transportation public-private partnerships (P3s). The 1993 law authorized the Secretary of Transportation to select up to six demonstration projects using the private sector to undertake projects on behalf of the WSDOT.

One of the explicit goals of the 1993 law was to build or operate transportation projects without requiring state tax dollars. The intent language of SHB 1006 as adopted by the Legislature said “such initiatives will supplement state transportation revenues, allowing the state to use its limited resources for other needed projects.”

In 1994, WSDOT issued a Request for Proposals inviting private firms to submit proposed projects for consideration. Fourteen proposals were submitted; the Secretary selected and the Transportation Commission approved six for further consideration. Over the next few years, five projects were dropped from consideration due to funding concerns, legislative opposition, or lack of public support. The last project was a new SR 16 Tacoma Narrows Bridge. In 1997, WSDOT selected a private consortium led by Bechtel Infrastructure and Kiewit Pacific to construct and operate the bridge as a P3. Additional information on Washington P3s can be found at <http://www.wsdot.wa.gov/Funding/Partners/History.htm>.

November 1998 election

Two measures on the November ballot affected the Tacoma Narrows Bridge project: a public advisory election on building the new bridge as a public-private partnership, and a referendum authorizing \$1.9 billion in motor vehicle fuel tax general obligation bonds.

An August 24, 1998, *Seattle Times* story by Jim Lynch describes some of the rationale supporting private financing.

“The ballot measure will ask whether a private company should finance the bridge construction with corporate bonds that would be paid back with toll fees. The toll would start no higher than \$3 per car but could increase over time.

DOT officials call it the quickest and most efficient way to solve the traffic crisis on the bridge, noting that even if voters pass the Referendum 49 transportation-spending plan in November, there still won't be nearly enough public money available to tackle the state's estimated \$30 billion list of roadway improvements - especially pricey projects like this bridge.

Officials also say that letting a company build, maintain, operate and take responsibility for the bridge is a perfect solution for the times, considering the Legislature's mandate to shrink government and turn over more services to the private sector.

It also is billed as a creative way to avoid forming a toll-bridge bureaucracy within state government and a massive public debt.”

On November 3, 1998, the TNB public advisory election was held in the seven counties served by the bridge (Clallam, Jefferson, Kitsap, and Thurston counties, and portions of King, Mason, and Pierce counties), asking if a second bridge should be built in order to reduce significant daily congestion, and improve safety. The

ballot measure was approved by more than 53 percent of voters in the seven counties; it was approved in King, Mason, Pierce and Thurston counties, and rejected in Clallam, Jefferson and Kitsap counties.

The ballot measure asked if the TNB should be modified and a parallel bridge constructed, financed by tolls on bridge traffic and operated as a public-private partnership. The measure stipulated that toll revenues would be used to finance the improvements to the existing bridge, a new bridge parallel to the existing bridge, and a toll plaza located on the west side of the Narrows. It also stipulated the following:

- the initial round-trip toll was not to exceed \$3.00 and would be charged when the new bridge is open to traffic;
- the round trip toll may be adjusted at any time after the new bridge is open, consistent with limits imposed by state law;
- toll revenues would pay for development, financing, design, construction, maintenance and operations; and
- tolls would be collected until all bond retirement and interest has been paid (RCW 47.46.140).

Referendum 49 bonds. Voters were also asked on November 3, 1998, to approve Referendum 49 (R-49), (Chapter 321, Laws of 1998), authorizing \$1.9 billion in motor vehicle fuel tax general obligation bonds “to provide funds necessary for the location, design, right of way, and construction of state and local highway improvements” to be deposited in the motor vehicle account. The bonds issued under R-49 are “first payable from the proceeds of the state excise taxes on motor vehicle and special fuels.” R-49 was approved in all 39 counties, by a vote of 57% - 43%.

Project is approved as P3

Following the November vote, Secretary of Transportation Sid Morrison approved the TNB project to move forward as a P3; the Transportation Commission unanimously endorsed his decision. The Legislature approved a \$50 million state contribution to the project during the 1999 legislative session. In June 1999, WSDOT entered into an agreement with United Infrastructure Washington, Inc. (UIW) to finance, develop, build and operate the new SR 16 bridge across the Tacoma Narrows. UIW was granted the “exclusive right to impose tolls” and the “exclusive right to establish, modify and adjust the rate of tolls.” In 2000, Gov. Gary Locke approved \$800 million in privately-issued tax exempt financing for the project.

Supreme Court decision

Project opponents said the project was unconstitutional on several issues. Fourteen lawsuits were filed by Citizens Against Tolls, one private citizen, and the Peninsula Neighborhood Association seeking to force the state to reduce project costs, reduce or eliminate tolls, and/or halt the project altogether.

On November 9, 2000, the Washington State Supreme Court issued a unanimous decision saying the agreement between WSDOT and UIW violated state law. Violations included allowing tolls on the existing bridge, allowing a private entity to set tolls instead of the Transportation Commission, and allowing tolls to be used for the maintenance and operation costs of the existing bridge (142 Wn.2d 328). This ruling effectively halted the project.

During the 2001 regular legislative session and special sessions, WSDOT and UIW sought changes in the statutes that conflicted with their agreement; no such legislation was approved. On December 27, 2001, WSDOT and UIW reached an agreement that committed each party to work toward amending the existing development agreement to incorporate public financing for the project, should legislation be enacted that called for public financing.

2002 Project Financing, and Initial Financing Assumptions

Several factors contributed to the current financing and toll structure for the bridge. Public financing, the completed project coming in under budget, and lower-than-anticipated bond interest rates reduced the projected debt service and resulting pressure on tolls. However, the type of bonds that the State Finance Committee issued severely limited refinancing opportunities to lower debt service payments when interest rates fell.

Public vs. private financing

A number of legislators objected to the private financing of a public facility, as had been proposed in the agreement between WSDOT and UIW. State Treasurer Michael Murphy suggested at least \$400 million could be saved by having the State issue public sector bonds rather than using private P3 financing.

Legislation redirecting the project and requiring public financing for design and construction was approved by the Legislature in March 2002, and signed by Governor Locke (EHB 2723, Chapter 114, Laws of 2002).

WSDOT then revised and finalized agreements with UIW and Tacoma Narrows Constructors, Inc. (TNC), a joint venture of Bechtel Infrastructure Corporation and Kiewit Pacific Company and the design-build contractor for the project. WSDOT took over management of the construction and operation of the project, reimbursing UIW for their development efforts to-date. These new agreements accommodated the change in financing and completed remaining development activities for the project, which broke ground in October 2002.

Project financed with R-49 gas tax bonds

The project was estimated to cost \$839 million. Legislature appropriated \$800 million of the existing R-49 bond authorization for the TNB project. In addition, the Legislature authorized a \$39 million transfer from the Motor Vehicle Account to the new Tacoma Narrows Toll Bridge Account to cover the balance of the estimated costs.

The R-49 bonds were voter-approved, tax-exempt bonds backed by the Motor Vehicle Account (fuel tax) and the full faith and credit of the state. Fuel tax dollars were pledged to the bond holders – not toll revenues. However, the 2002 legislation (EHB 2723) required toll revenues to reimburse the Motor Vehicle Account for debt service, and to pay annual operating and maintenance expenses and insurance costs of the new toll bridge.

2002 finance plan calls for \$3.00 initial toll, increasing to \$6.00

WSDOT developed a finance plan for the new bridge in 2002, which included tolls to be collected on the new bridge. The 2002 plan assumed an initial toll to be \$3.00 at the time of bridge opening in 2007, with future \$1.00 increases in 2010, 2013, and 2016. The 2002 plan showed no increases beyond \$6.00.

Construction funding and zero coupon bonds

The State Finance Committee, acting through the Office of the State Treasurer (OST), had to find a financing tool to pay construction costs during the five-year period of design and construction. At issue was the availability of revenues to pay debt service. Since state law prohibited tolls on the existing bridge to finance the new bridge, other means had to be identified to finance debt service before the new bridge opened to toll-paying traffic in 2007. Working with the OST, the Legislature evaluated a number of financing options. Worksheets used in 2002 to discuss these options with legislators are included in the Appendix pp 80-82.

One option required state appropriations to pay debt service during construction

One financing option called for level debt service of approximately \$51 million/year throughout the life of the debt. This option required an up-front appropriation of \$118 million in state tax dollars to pay debt service during construction. This \$118 million would have been paid back by tolls during the tolling period. (See Appendix, p. 81, for illustration of this option, listed as Option A.)

The proposed toll schedule for this option assumed a \$3.00 toll from 2007-2010, gradually growing to \$4.75 in 2017, and maxing out at \$5.00 in 2022. Tolls would most likely have been able to come off before 2029.

NOTE: These toll levels were estimates used to discuss potential financing options with legislators during the 2002 legislative session. They were not the result of detailed work on the TNB financial plan, which occurred after the conclusion of the 2002 legislative session, and which included much more detailed and rigorous analysis. As a result, the official finance plan adopted in 2002 showed tolls maxing out at \$6.00 rather than \$5.00.

This option was not selected to finance the bridge. The Legislature decided not to appropriate state tax dollars to cover debt service costs during construction, due in part to limited fuel tax funds, a huge backlog of projects that could be funded, and the original P3 promise that the bridge could be financed without state tax dollars.

Enacted financing required no appropriations for debt service during construction

With no toll revenue or tax dollars to pay debt service during construction, the majority of R-49 bonds issued to finance construction were zero coupon bonds. Zero coupon bonds are often used when a project expects low revenue in the early, start-up phases, and growing revenue later to make steeper debt payments. The upside of zero coupon bonds is they pay interest and principal only on the final maturity date. Therefore no revenues were needed for debt service during construction. However, their downside is they are relatively costly, and non-callable bonds cannot be refinanced when interest rates drop.

Most of the TNB bonds were issued as non-callable zero coupon bonds. A non-callable bond is a one that cannot be redeemed (called) at the option of the issuer prior to the maturity date. While callable zero coupon bonds exist, they are unusual, rarely issued, and more costly than non-callable bonds, according to the Office of the State Treasurer.

The TNB debt structure was designed to escalate as revenues escalated; it started out low, and escalated through the end of the financing period. Compared to Option A described above, it provided

lower annual debt service through 2013, and followed by accelerating debt service that reached about \$90 million a year by 2029. This is essentially the debt service existing today. (See Appendix, p. 81, for illustration of this option, listed as Option E.)

The proposed toll schedule for the financing that was enacted started at \$3.00 from 2007-2010, gradually growing to \$4.75 by 2017, and maxing out at \$5.00 in 2021. Tolls would come off in 2029. This proposed toll schedule was slightly more expensive than Option A, but not significantly so. *NOTE: These toll levels were estimates used to discuss potential financing options with legislators during the 2002 legislative session. They were not the result of detailed work on the TNB financial plan, which occurred after the conclusion of the 2002 legislative session, and which included much more detailed and rigorous analysis. As a result, the official finance plan adopted in 2002 showed tolls maxing out at \$6.00 rather than \$5.00.*

Implementing the Financing Plan

The entire project was estimated to cost \$839 million; this included costs for construction, financing, sales tax, and related costs. These costs were financed from ten separate bond series issued between 2002 and 2007.

\$300 million in debt service savings due to lower construction costs and interest rates

The 2002 finance plan assumed the construction element of the project would cost \$761 million, and that \$800 million in bonds would be sold throughout construction at an interest rate of 5.85%.

In fact, by 2007 when the project was completed, construction costs came in under budget, at \$717.3 million, and with favorable market conditions, bond sales totaled \$684 million at an average rate of 4.93%. Subsequent bond refinancings in 2012 would drop the overall average rate to 4.76%.

This combination of favorable factors resulted in \$300 million in debt service savings over the life of the financing, as shown in Exhibit 2 below.

Exhibit 2

| Tacoma Narrows Bridge Capital Sources and Uses of Funds <i>nominal dollars in millions</i> | | |
|--|---|---|
| | July 2013 Financial Plan <i>Through June 30, 2013</i> | July 2002 Financial Plan |
| Sources of Funds | | |
| Interest Earnings | \$8.8 | \$10.5 |
| Gross Bond Proceeds | 684.2 | 726.0 |
| Capitalized Interest | (4.4) | (4.8) |
| Expenditures from Motor Vehicle Account | 11.0 | 11.0 |
| Transfers from Motor Vehicle Account | 39.0 | 39.0 |
| Total Sources of Funds | \$738.7 | \$781.7 |
| Uses of Funds | | |
| Cost of Issuance | \$6.4 | \$7.6 |
| Capital Construction in TNB Account | 717.3 | 760.4 |
| Capital Construction in MVA Account | 11.0 | 11.0 |
| R & R Costs | 0.2 | 0.8 |
| Total Uses of Funds | \$734.9 | \$779.8 |
| Interest rate on bonds sold | 4.93% | 5.85% |
| Total Debt Service through 2030 | \$1,483 | \$1,783 |

Total debt service through 2030 does not include \$4.4 million in capitalized interest.

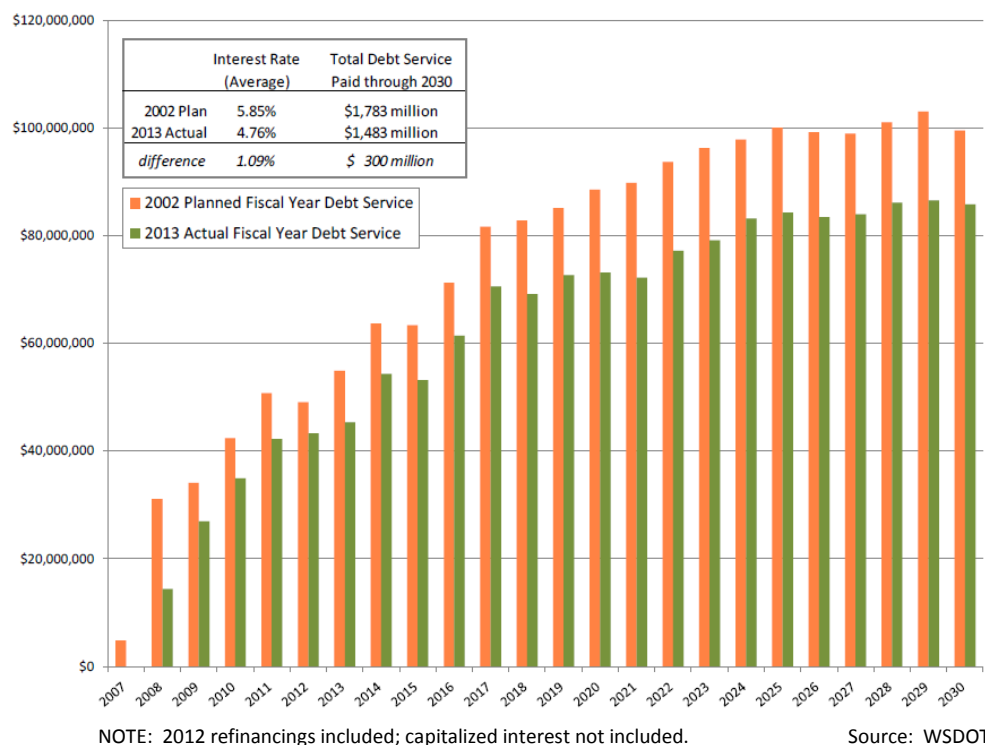
Source: WSDOT

The graphs below shows projected annual debt service and toll revenues underlying the 2002 finance plan at the time of the initial bond sale, and debt service and toll revenues under the current finance plan.

A comparison of these two finance plans shows the approximately \$300 million in debt service savings that resulted from lower-than-projected project costs and bond interest rates. The orange bars in Exhibit 3 below shows the 2002 projected debt service, while the green bars show the actual debt service for the bridge. The difference represents the \$300 million in actual debt service savings compared to the 2002 projected debt service.

Exhibit 3

**Tacoma Narrows Bridge Fiscal Year Debt Service
Actuals vs. 2002 Financial Plan**
nominal dollars



Refinancing opportunities are limited

The project was funded from ten separate bond issuances shown in Exhibit 4 below. With current interest rates at historic lows today, some have suggested refinancing the bridge debt in order to lower debt service payments.

However, the Office of the State Treasurer (OST) reports that conventional refinancing is not possible for the majority of bonds issued to finance the bridge. Eight of the bond series were non-callable zero coupon bonds, which cannot be recalled and refinanced. Two bond series were callable (current interest) bonds, eligible for refinancing when interest rates fall. The callable (current interest) bonds represent only a small portion of the overall bond portfolio for the project.

In September 2012, the OST did refinance one of the two callable (current interest) bonds (2006C, bond sale #7). The savings were \$413,088; \$254,519; \$254,419; \$507,768 for fiscal years 2013 through 2016, respectively, with total savings of \$8,555,150 over the life of the bonds (or \$5,815,311 in current dollars).

The callable bonds of 2008B (the other series with current interest bonds, totaling \$7.9 million) have not been refinanced because estimated savings do not reach the state's minimum savings thresholds.

The OST also reviewed alternative market strategies to substitute bonds with longer maturities for the existing bonds, in order to lower debt service payments. They found the alternatives too costly to consider. The alternatives included a "tender" and a "defeasance." A tender involves issuing new tax-exempt debt and using proceeds of the new bonds to buy a portion of the outstanding bonds back from investors. A defeasance consists of issuing new taxable debt and using the proceeds to buy a portfolio of U. S. Treasuries that produces income sufficient to cover the debt service on the outstanding TNB bonds. Analysis showed that any tender or defeasance options would be quite costly to the State in the current market -- \$250 million to \$550 million -- because short-term interest rates are so low.

Moreover, neither alternative could be implemented under current law (RCW 39.53.090). Current law states that any refunding bonds may not have final maturities that extend beyond the original bonds that they are refunding, when the bonds to be refunded are voter-approved general obligation bonds. The TNB bonds are voter-approved R-49 general obligation bonds. Accordingly, the non-callable TNB bonds cannot be restructured under current statutes.

Exhibit 4 – The Ten Bond Series Issued to Finance Construction of the Bridge

| Series | Sales Date | Par Amount | Maturity Amount | True Interest Cost | Final Maturity | Type of Bonds |
|---------------|------------|-------------------------|----------------------|--------------------|----------------|------------------|
| 2003C | 9/18/2002 | 158,000,317 | 371,975,000 | 4.86% | 6/1/2030 | Zero Coupon |
| 2003F | 1/22/2003 | 75,001,618 | 178,625,000 | 5.24% | 12/1/2029 | Zero Coupon |
| 2004C | 7/22/2003 | 110,001,632 | 266,910,000 | 5.38% | 6/1/2030 | Zero Coupon |
| 2004F | 2/3/2004 | 89,982,568 | 193,395,000 | 4.89% | 12/1/2029 | Zero Coupon |
| 2005C | 7/13/2004 | 65,001,473 | 139,050,000 | 5.18% | 6/1/2030 | Zero Coupon |
| 2005F | 3/1/2005 | 45,001,192 | 87,320,000 | 4.84% | 12/1/2029 | Zero Coupon |
| 2006C | 9/7/2005 | 55,000,000 | 55,000,000 | 4.44% | 6/1/2030 | Current Interest |
| 2006F | 1/24/2006 | 55,001,856 | 100,735,000 | 4.38% | 12/1/2029 | Zero Coupon |
| 2007E | 1/23/2007 | 16,180,976 | 33,955,000 | 4.51% | 12/1/2029 | Zero Coupon |
| 2008B | 9/12/2007 | 12,000,000 ¹ | 12,000,000 | 4.35% | 7/1/2029 | Current Interest |
| Total: | | 681,171,634 | 1,438,965,000 | | | |

1) Portion of Series 2008B attributable to the TNB.

Source: OST

A January 30, 2012, memo from the OST to State Senator Derek Kilmer explains in detail the analysis of the alternative market strategies referenced above, and is found in the Appendix p. 83.

Fuel Tax-Funded Investments Supporting the New Bridge: \$649 Million

Since 2003, the Legislature has approved a number of fuel tax-funded investments along the SR 16 corridor intended to improve the flow of traffic to and over the new bridge, and throughout the corridor. Investments in SR 16 totaled \$134 million, and included improvements north and south of the bridge, primarily widened bridges and the creation of HOV lanes. In addition, the Legislature approved \$515 million in fuel tax funding for three projects to rebuild the I-5/SR 16 Nalley Valley interchange and HOV facilities. None of these projects are financed with tolls.

Washington State Department of Transportation SR 16 Investments Completed Since 2003

August 2013

Exhibit 5



| | PE | RW | CN | TOTALS |
|-------------------|---------------------|--------------------|----------------------|-----------------------|
| State, non-Nickel | \$9,951,102 | \$1,280,790 | \$23,133,910 | \$34,365,802 |
| State, Nickel | \$2,560,732 | \$3,689,074 | \$90,632,720 | \$96,882,526 |
| Local | \$1,965 | | \$56,426 | \$58,391 |
| Fed | \$594,945 | \$2,164,879 | | \$2,759,824 |
| TOTALS | \$13,108,744 | \$7,134,743 | \$113,823,056 | \$134,066,543* |

* Above total does not include three projects to rebuild I-5/SR 16 Interchange ("Nalley Valley" projects) and HOV facilities at a cost of \$515 million.

TNB Toll Rates

The Transportation Commission is designated by law as the State Tolling Authority and sets toll rates for all state highways and bridges. <http://wstc.wa.gov/HighwayTolling/default.htm>

Current toll rates and options to pay

Today's TNB users have five options to pay their tolls, and each comes with a different toll price. The rates below apply to two-axle vehicles and motorcycles. For vehicles with more than two axles, rates are determined by the number of axles.

| | Effective July 1, 2013 | Effective July 1, 2014 |
|--|-----------------------------------|-----------------------------------|
| Automatic payment via transponder (<i>Good To Go!</i> pass) | \$4.25 | \$4.50 |
| Automatic payment via Pay By Plate (PBP) | \$4.50 | \$4.75 |
| Cash paid at the toll booth | \$5.25 | \$5.50 |
| Short term account set up within 72 hours of crossing the bridge | \$5.75 | \$6.00 |
| Pay by Mail (PBM) | \$6.25 | \$6.50 |

Historical toll rates on the 1940 and 1950 Tacoma Narrows bridges

The first Tacoma Narrows Bridge toll was imposed in 1940; it was \$1.10 for a round trip, or the equivalent of \$18.22 in 2013 dollars. When the second bridge opened in 1950, the starting toll was \$1.00, or the equivalent of \$9.77 in 2013 dollars.

History of toll rates on the new Tacoma Narrows Bridge

2002 financial plan called for initial \$3.00 toll. In 1999, Wilbur Smith Associates (now CDM Smith) was hired to undertake a traffic and revenue study for the TNB project; a finalized study was presented in May 2002. The recommended toll rate was \$3.00 with future \$1.00 increases in January 2010, 2013, and 2016, plus additional fees for vehicles with more than two axles. Based on the toll rates and traffic projections, the projected revenues were determined to be sufficient to pay for debt service, and operating and maintenance expenses.

2005 financial plan update. In 2005, the financial plan and traffic forecast were updated. Due to more pessimistic economic factors, the projected toll revenue decreased. The 2005 update included the latest traffic volume data for the bridge and competing state ferry routes, and the latest socioeconomic and demographic forecasts to determine, among other things, the extent of the airline industry's and Boeing's economic recovery from the September 11, 2001, attack on the World Trade Center. There was no change to the toll rate structure in the 2005 update.

2007 initial toll rates. In March 2006, prior to the start of tolling, the Legislature approved a \$1.3 million transfer from the Multimodal Account to the TNB Account as a non-reimbursable state contribution. The purpose of the contribution was to allow up to a 50% discount on the toll for electronic toll payers while the old existing bridge was retrofitted. This buy-down allowed the initial electronic toll collection (ETC) rate to be set at \$1.75. The cash toll was \$3.00, with a higher rate for vehicles with more than two axles.

2008 toll rate increase. On July 1, 2008, the 2-axle rate increased to \$2.75 for *Good To Go!* and \$4.00 for cash, the increases driven by the financial plan and revenue forecast of the TNB Account. These rates remained in place for four years, until July 1, 2012.

2010 no toll increase. The 2005 financial plan assumed a \$1.00 toll rate increase (to \$4.00) in FY 2010. That did not occur, due in part to lower debt service, operating and maintenance costs, the addition of other revenue, and the delay in repayment of the deferred sales tax and a \$5.288 million loan.

During the 2010 rate setting process, the Transportation Commission discussed toll rates and levels of fund balance, and considered a proposal by the Office of the State Treasurer (OST) to introduce coverage requirements as a function of toll rate setting. They also considered a Citizens Advisory Committee (CAC) proposal to target a low fund balance in order to postpone toll rate increases.

The Commission decided to hold toll rates constant and relied upon fund balances to offset expense increases in FY 2011, realizing that rates would need to increase in FY 2013. The Commission also voted to create a Sufficient Minimum Balance Policy (SMB) (see p. 40 for full description), to ensure future rate setting would protect against a dangerously low fund balance. The Commission acknowledged that this strategy of drawing down fund balances to avoid rate increases was delaying the inevitable, and would lead to even larger increases in the coming fiscal years to match revenues with expenses.

2010 toll administration changes. The 2010 Legislature passed ESSB 6499 modifying the administration, collection, and enforcement of tolls. Previously, tolls were paid electronically by customers with a prepaid account and a vehicle transponder, or manually at a toll booth with cash or credit. The new legislation authorized photo tolls, which are paid after the driver uses a toll facility, via license plate photograph to identify a vehicle. Photo tolls may be paid using a Pay By Plate customer account, Short-Term account, or through a toll bill (also called Pay By Mail).

2012 rate setting. In response to the 2010 administrative changes, in 2011 the Commission established new rates, fees and discounts associated with photo tolling, including Pay By Mail, Pay By Plate, and Short-term Accounts. Photo tolling and Pay By Mail for the TNB commenced in early December 2011, and in late December, 2011 WSDOT started tolling the SR 520 Bridge. TNB shares toll administration costs with the SR 167 and SR 520 toll facilities.

2013 rate increases. During the 2012 rate setting process, the Commission learned that the FY 2012 ending fund balance would fall well short of the SMB policy level. In order to increase toll revenue to match expenses, and to build the fund balance to the required SMB level, they adopted rate increases and reduced the difference between the *Good To Go!* and Pay By Mail rates to align statewide tolling pricing policies.

On July 1, 2012, TNB rates increased to \$4.00 for *Good To Go!*, \$5.00 for cash, and \$6.00 for Pay By Mail. The 2005 financial plan assumed the toll (weighted average toll) would be \$5.00 in FY 2013; the actual average weighted toll was \$4.44.

2014 and 2015 increases. In 2013, the Transportation Commission approved a 25 cent increase in all toll rates for FY 2014 (beginning July 1, 2013), and another 25 cent increase for FY 2015 (beginning July 1, 2014).

These rate increases were adopted in a single action with the intention of having the CAC review the traffic and revenue data and financial details later in FY 2014 to determine if the FY 2015 increase is sufficient. The Commission increased toll rates uniformly and incrementally across payment methods.

Toll rates have remained below the original planned toll rate

TNB toll rates have been consistently below rates originally contemplated when the 2002 finance plan was developed and adopted, and based upon which construction bonds were sold. The Exhibits below from WSDOT show the planned and actual toll rate structure; the 2002 planned rates are highlighted in tan in each.

Exhibit 6

| | | FY07 | FY08 | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | FY15 | FY16 ~ FY30 |
|------------------------|------|--------|---------|---------|---------|---------|---------|---------|---------|---------|-------------|
| 2002 planned toll rate | Cash | \$3.00 | | | \$4.00 | | | \$5.00 | | | \$6.00 |
| Actual toll rate | ETC | N/A | \$ 1.75 | \$2.75 | | | \$ 2.75 | \$ 4.00 | \$ 4.25 | \$ 4.50 | |
| | Cash | | \$ 3.00 | \$4.00 | | | \$ 4.00 | \$ 5.00 | \$ 5.25 | \$ 5.50 | |
| | PBM | | | | | | \$ 5.50 | \$ 6.00 | \$ 6.25 | \$ 6.50 | |
| Weighted avg toll | | | \$ 2.12 | \$ 3.13 | \$ 3.13 | \$ 3.13 | \$ 3.13 | \$ 4.44 | \$ 4.57 | \$ 4.82 | |

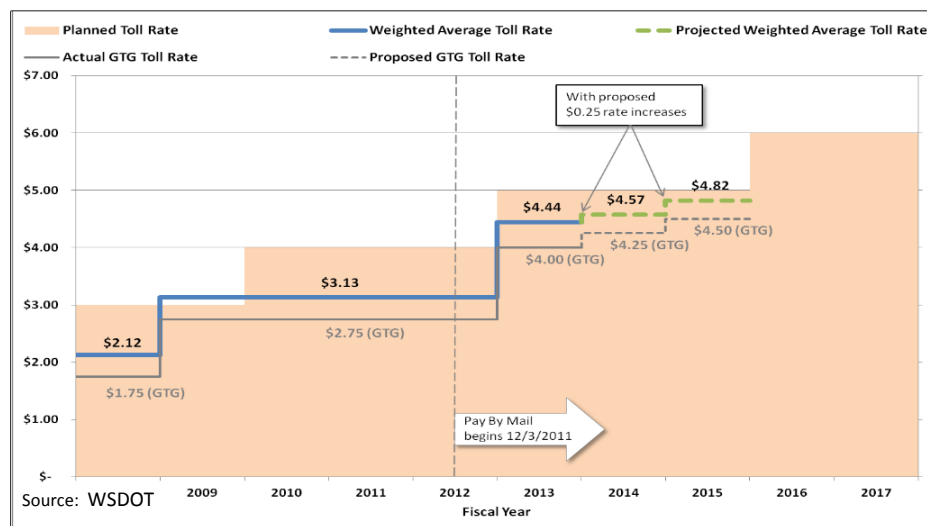
The *planned* toll rate is based on the original 2002 finance plan, which included only one toll rate. The *weighted average* toll rate is comprised of all two-axle toll rates, proportional to their usage. It is the best comparison to the single rate originally contemplated. The *blended* toll rate used in this study to describe potential toll impacts of various evaluated scenarios is similar to the weighted average toll rate.

Currently about 73% of users pay via transponders, 22% pay cash, and 5% pay by mail. Those paying by transponder is projected to increase to 77% by 2025, with a corresponding decrease in those paying cash.

Exhibit 7

| | 2002 Planned toll | Actual Good To Go! toll | Weighted average toll |
|------|----------------------|----------------------------|--------------------------|
| 2008 | \$3.00 | \$1.75 | \$2.12 |
| 2009 | \$3.00 | \$2.75 | \$3.13 |
| 2010 | \$4.00 | \$2.75 | \$3.13 |
| 2011 | \$4.00 | \$2.75 | \$3.13 |
| 2012 | \$4.00 | \$2.75 | \$3.13 |
| 2013 | \$5.00 | \$4.00 | \$4.44 |
| 2014 | \$5.00 | \$4.25 | \$4.57 |
| 2015 | \$5.00 | \$4.50 | \$4.82 |
| 2016 | \$6.00 | TBD | TBD |

Exhibit 8



Transportation Commission sets TNB toll rates

The Washington State Transportation Commission is charged with setting tolls for all state toll facilities. The Commission monitors each facility's financial plan and adjusts rates to ensure expense coverage, including an appropriate minimum balance.

As part of their general rate setting work, the Commission considers estimates of toll revenue and costs for several years in the future. But they typically set rates one and sometimes two years in advance, so that the rates are responsive to the dynamic economic factors that influence rates, revenues and costs.

For TNB rate setting, a nine-member Citizen's Advisory Committee (CAC) was appointed by the Governor starting in 2006 to provide recommendations to the Commission on toll rates (RCW 47.46.090). Composed of permanent residents of the bridge area, the CAC generally has approached its work in three steps: understanding the financial plan, requesting traffic and revenue forecasts, and voting to recommend proposed rates.

Typically the CAC is convened in the Fall prior to the year in which rates are to be adjusted. The CAC holds several meetings, reviewing detailed financial and operational information, and works towards arriving at a rate recommendation for the next fiscal year.

The CAC presents its rate recommendations to the Transportation Commission in the early part of the year in which rate setting would occur, typically in February or March.

Once the Transportation Commission receives the CAC recommendation, the Commission follows the rulemaking process prescribed by the Washington Administrative Procedures Act (Chapter 34.05, RCW) to enact new toll rates. The Commission arrives at its toll rate adjustment proposal based upon the CAC recommendations, WSDOT suggestions, and the Transportation Commission's own review of detailed financial information and up-to-date traffic and revenue estimates of various rate scenarios.

The Commission makes a formal rate recommendation by filing a proposed rule and then holds public input meetings in the impacted communities surrounding the bridge on the proposed rates. After the proposed rule is published in the Washington State Register and a waiting period passes, the Commission holds a formal rate hearing, after which a final rate-setting action can be taken and a final rule filed. Rates changes typically take effect on July 1 of the year they are adopted.

Expenditure Factors Affecting Toll Rates

Expenditure Factors Affecting Toll Rates

In setting toll rates, the Transportation Commission looks at expenditures that tolls must cover. This includes debt service, toll vendor and toll operations costs, bridge insurance, bridge maintenance and preservation costs, the sufficient minimum balance, loans that require repayment, and the construction sales tax whose payment was deferred by legislation adopted in 1998 and 2012.

RCW 47.46.100 addresses the duties of the Transportation Commission in setting toll rates for the Tacoma Narrows Bridge. It requires the Commission to give due consideration to any required costs for operating and maintaining the toll bridge or toll bridges, including the cost of insurance, and to any amount required by law to pay debt service and interest.

This statute requires the Commission to impose toll charges sufficient to do the following:

- Provide annual revenue sufficient to pay annual operating and maintenance expenses, until the bonds are fully paid.
- Pay insurance costs and debt service payments (principal and interest), including reimbursing the motor vehicle fund for any debt service payments made on the TNB.

A number of other statutes also identify costs that TNB tolls must cover. The costs must relate directly to the TNB. By law, tolls must cover costs to:

| | |
|---|---|
| Make debt service payments on construction bonds, including reimbursing the motor vehicle fund for any payments made on TNB bonds | RCW 47.46.100, RCW 47.46.140, RCW 47.56.165 |
| Operate and maintain the new bridge (but not the old one), operate and maintain toll collection | RCW 47.46.100, RCW 47.56.245, RCW 47.56.165 |
| Make necessary repairs and restoration to the new bridge | RCW 47.46.100, RCW 47.56.165 |
| Purchase insurance in case something happens that takes the bridge out of service | RCW 47.46.100 |
| Pay deferred construction sales and use tax | RCW 47.46.060 |

The Transportation Commission has also adopted a policy calling for a Sufficient Minimum Balance (SMB) in the TNB Account, in order to ensure sufficient toll revenues are available to pay legally required costs in the event toll collections are lower than projected. The SMB policy is discussed on p. 40.

Debt service

As discussed earlier, TNB debt service started low and escalates throughout the life of the debt. Exhibit 3 on p. 20 shows the actual debt service compared to that anticipated in the 2002 financial plan.

For purposes of this study and as used in the scenario estimating tool, WSDOT has estimated annual debt service costs as follows. These amounts include the projected withholding amounts necessary to make payments to bond holders. This addresses a payment timing issue.

Exhibit 9

| TNB Debt Service | | |
|------------------|----|------------|
| FY 2014 | \$ | 54,932,000 |
| FY 2015 | \$ | 54,735,000 |
| FY 2016 | \$ | 62,311,000 |
| FY 2017 | \$ | 70,092,000 |
| FY 2018 | \$ | 69,889,000 |
| FY 2019 | \$ | 72,861,000 |
| FY 2020 | \$ | 72,770,000 |
| FY 2021 | \$ | 72,478,000 |
| FY 2022 | \$ | 78,093,000 |
| FY 2023 | \$ | 79,339,000 |
| FY 2024 | \$ | 83,480,000 |
| FY 2025 | \$ | 84,301,000 |
| FY 2026 | \$ | 83,683,000 |
| FY 2027 | \$ | 84,047,000 |
| FY 2028 | \$ | 86,325,000 |
| FY 2029 | \$ | 86,542,000 |
| FY 2030 | \$ | 79,660,000 |

Source: WSDOT

Operations and Maintenance Costs (O&M)

WSDOT defines TNB operations and maintenance costs to include the following: toll vendor costs, WSDOT toll operations costs; maintenance and preservation costs (renewal and replacement of the new bridge); and bridge insurance. Exhibit 10 below uses different terminology, because it is an old table and the terminology has changed today.

On the next six pages, we'll discuss O&M costs from a broader perspective, and then beginning on p. 36, discuss each element of cost as discussed and evaluated in this study.

Historical comparison of O&M costs

Exhibit 10 shows sources and uses of operating funds for the bridge through June, 2013, both as estimated in the 2002 finance plan, and the actuals through June, 2013.

Focusing on the uses of funds (the expenditures), it shows that four elements of costs have been lower than anticipated: WSDOT's management costs, insurance, enforcement and security and maintenance. These represent savings of \$25.2 million, or 45% of the 2002 financial plan estimates.

One element is higher than anticipated: the toll vendor contract, which is \$9.6 million or 29% higher than anticipated in 2002. WSDOT reports that the 2002 estimated cost was a "soft" number estimated by the project director, and not a price negotiated with the vendor. The 2002 estimate also underestimated the number of transponders distributed for free in the early years of the project. WSDOT renegotiated the contract with the vendor early on to reduce costs and tie vendor reimbursement to fixed prices.

Total operating costs through June 2013 were \$15.6 million or 17.4% lower than projected in the 2002 financial plan, after equalizing for the differential treatment of the deferred sales tax repayment.

Exhibit 10

| Tacoma Narrows Bridge | | |
|---|-----------------------------|-----------------------------|
| Operating Sources and Uses of Funds | | |
| <i>nominal dollars in millions</i> | | |
| | July 2013 Financial Plan | July 2002 Financial Plan |
| | <i>Through June 2013</i> | |
| Sources of Funds | | |
| Miscellaneous Revenue | \$4.1 | - |
| Interest Earnings | 1.4 | 1.6 |
| Fines and Fees | 7.3 | - |
| Transponder Sales | 3.3 | - |
| Toll Revenue | 266.5 | 366.1 |
| Loan from Motor Vehicle Account | 5.3 | - |
| Transfers from Other Accounts | 1.3 | - |
| Total Sources of Funds | \$289.2 | \$367.7 |
| Debt Service | (\$207.7) | (\$262.9) |
| Remaining Funds | \$81.4 | \$105.5 |
| Uses of Funds | | |
| WSDOT Management Costs | \$18.2 | \$21.9 |
| Toll Systems Operations (Vendor Contract) | 42.8 | 33.2 |
| Insurance | 10.1 | 23.0 |
| Enforcement and Security | 1.4 | 5.1 |
| Maintenance | 1.2 | 6.3 |
| Deferred Sales Tax* | - | 9.0 |
| Total Uses of Funds | \$73.8 | \$98.4 |
| <i>The 2002 Financial Plan anticipated the bridge opening April 2007. Actual bridge opening was July 2007</i> | | |
| *Deferred sales tax is a capital expenditure, to be repaid by tolls. | | |

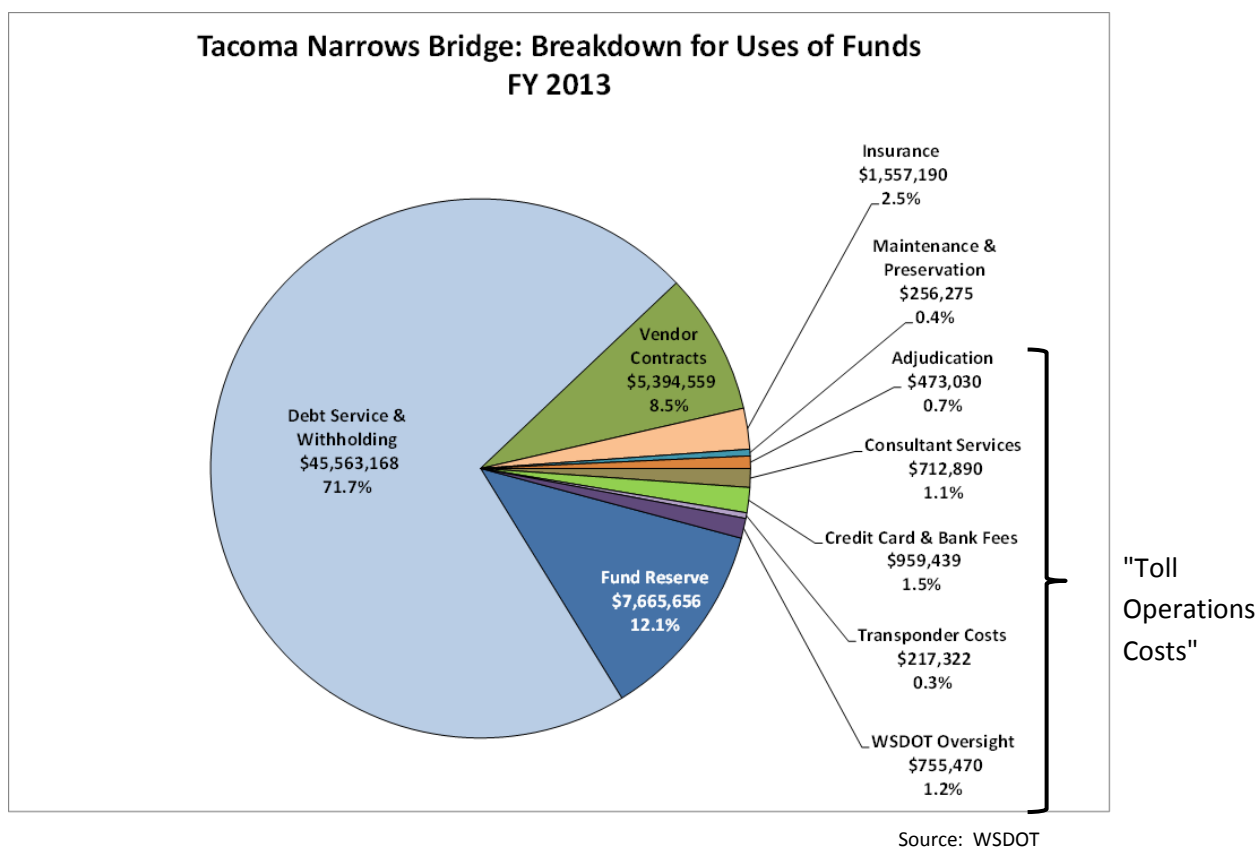
Source: WSDOT

Current O&M costs

In FY 2013, toll operations, maintenance, insurance, and vendor costs accounted for about 16 percent of costs supported by tolls. The largest cost paid for by tolls is debt service at 72 percent. (Note that, consistent with information provided to the Citizen Advisory Committee, the Transportation Commission's sufficient minimum balance requirement is also counted as an expense.)

For purposes of comparison, the scenario estimating tool created as part of this study includes a cost category called "toll operations costs," which includes the elements noted below: adjudication, consultants, credit card fees, transponders, and WSDOT oversight.

Exhibit 11

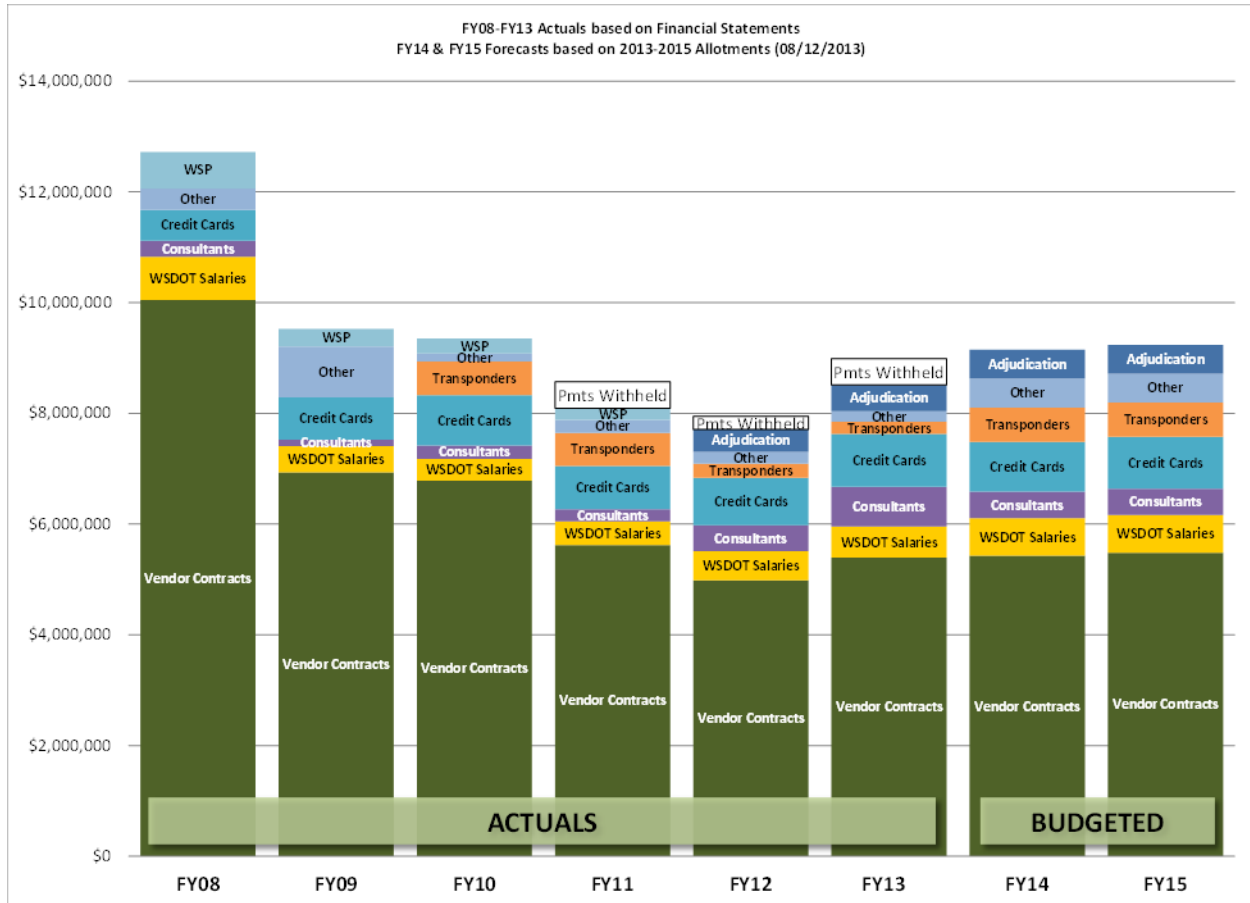


Over time, *actual* expenditures (through FY 2012 on the following chart) demonstrate a general decline, with slight expenditure increases into FY 2013. The general decline is due to:

- transitioning to the statewide Customer Service Center (CSC) which shifted some toll collections costs to other tolled facilities,
- vendor payments withheld due to delays and difficulties in the roll-out of the CSC, and
- holding TNB harmless from cost increases during the transition period.

As shown below, FY 2013 cost increases appear to be due largely to increases in credit card fees and consultant use. Credit card costs are driven mostly by the value of the transaction (the toll rate); the *Good To Go!* rate increased from \$2.75 in FY 2012 to \$4.00 in FY 2013. In the case of consultant costs, the Toll Division has increased its use of consultants to backfill vacant WSDOT positions, to increase forecasting work, and to conduct studies directed by the Governor, Legislature and State Auditor.

Exhibit 12 -- Historical and Budgeted TNB Toll Operation Expenses by Category



Source: WSDOT

Future O&M costs

The inflation factor

The following graph from WSDOT shows projected O&M costs through 2030, according to the 2012 TNB financial plan. The outlook appears better than in 2002 because the 2002 plan assumed higher inflation on insurance, incidence response, bridge maintenance, toll systems operations, and WSDOT's toll operations costs. The full growth rate of the forecasted Implicit Price Deflator (IPD) was used in 2002, while just half the rate was used in 2012.

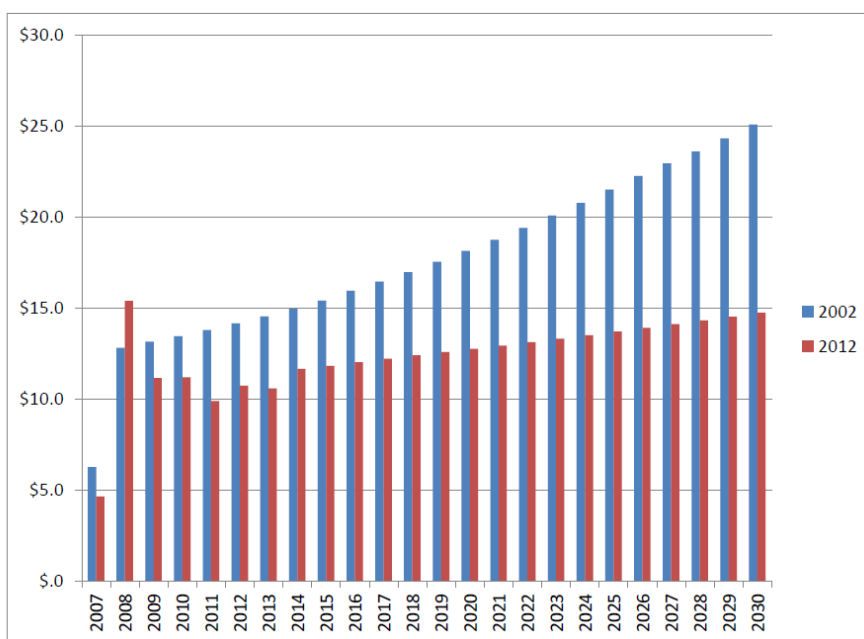
Why half the rate? It has been a legislative practice to inflate out-year operating cost estimates at half the rate of inflation in legislative finance plans unless there is a demonstrable deficiency in applying such an assumption. The legislative finance plan is an internal planning tool only, and not something endorsed or approved by the Legislature. One rationale for using half the rate of inflation is to put pressure on the agency to contain costs.

It appears WSDOT chose to apply that same assumption in their planning process, and in the update to the 2012 TNB finance plan. Whether that level of savings can be achieved remains to be seen. Some would argue it is unreasonable to assume an on-going year-after-year drop in real costs, which is what would have to occur in order for costs to increase at just half the rate of inflation.

For this study, JTC staff used the full rate of inflation to estimate future TNB costs when evaluating scenarios describing the potential impact of various spending and revenue changes on potential blended toll rates.

Exhibit 13

Tacoma Narrows Bridge Operating and Maintenance Expenditures
2012 Financial Plan vs. 2002 Financial Plan
nominal dollars in millions



Source: WSDOT

Budget reductions and cost control

Scenario 2 developed for this study evaluated the potential impact on toll rates of the 5% budget reduction enacted in the 2013-15 Transportation Budget. The scenario was intended to reflect the scale of reductions generally considered by the Legislature. It was determined that a 5% budget reduction would affect tolls by about a nickel. It is likely that cost reductions of this size are not large enough for the Transportation Commission to take action to adjust toll rates. However, efficiency measures are important means of offsetting other upward pressures on costs as well as demonstrating effective management of public funds.

As part of this study, WSDOT was asked to estimate savings related to a series of potential budget reduction options. Their responses are summarized below.

Are costs to collect some unpaid tolls in excess of the revenue collected? Is there a type of uncollected toll that should be ignored?

- The Toll Division is currently evaluating the appropriate dollar threshold for dismissal of unpaid civil penalties. In the coming months, the Division will also investigate out-of-state plates and motorcycles.

Are pay-by-mail adjudication costs using administrative law judges cheaper than district court judges? Are the revenues from fines and penalties expected to cover the full cost of the administration of the fines and penalties?

- WSDOT replied that it does not have the information to answer the first question.
- For purposes of this study, JTC staff looked at the 2010 final fiscal note for ESSB 6499. Pierce County reported that it had originally budgeted 4 clerical Full Time Equivalent (FTE) staff and 0.5 Commissioner FTE for this purpose. With county-wide budget reductions, these positions were not filled and the work was conducted by existing staff. As such, Pierce County costs appear to have been comparable or possibly less than WSDOT is currently spending. However, if Pierce County were to conduct the adjudications, they would also receive the revenue.
- WSDOT reports that fines and penalty revenue are currently covering expenses for the TNB. For the SR 520 Bridge, revenue exceeds expenditures. For FY 2013, WSDOT expenses for adjudicating TNB civil penalties were \$473,030; cash revenues were \$579,330. The adjudication program also includes SR 520 civil penalties. For SR 520 in this same period, expenses were \$1,468,555 and cash revenues were \$4.3 million.

What overhead is WSDOT charging to the TNB toll payers?

- General WSDOT overhead costs such as human resources or information technology are not charged to TNB toll payers. Allocated costs of Toll Division and Accounting and Financial Services staff are charged to the TNB. The Motor Vehicle Account funds Toll Division staff which would otherwise be charged, in part, to the TNB Account: Assistant Secretary and two director positions and their administrative assistants, as well as staff in policy, planning, finance, and program management.

Are there savings to be made from renegotiating contracts with credit card companies?

- Credit card costs to the State are driven mostly by the value of transactions, with a smaller portion applied on a per-transaction basis. Increases in toll rates result in higher bank fees even if traffic across the bridge is unchanged. The Office of the State Treasurer has recently renegotiated lower credit card fees, which will result in a lower per transaction cost. It is important to keep in mind that other cost drivers may outweigh these savings: changes in toll rates, traffic levels, and customer payment preferences. In addition, TNB cash collection lanes use an older payment processing technology platform which will not benefit from these reductions.

What would the savings be from automating the toll booths at the TNB? What are the labor costs associated with the toll booths and how much would an automated system cost?

- WSDOT collected some initial data to answer this question, but additional research is needed to develop full cost and staffing estimates, as well as the cost of enforcement such as adding cameras, and/or the potential for increased losses due to toll evasion. WSDOT believes this question should be framed within a broader analysis framework that also considers a cashless option to address which options best advance policy objectives.
- WSDOT has considered three options:
 1. run automatic toll payment machines (ATPMs) full time with no attendants
 2. run ATPMs during non-peak hours and staff with attendants during peak hours
 3. have one or two toll attendants and use credit card-only ATPMs for the other lanes
- Automated toll collection machines require onsite staff support. If machines collect cash payments and/or make change, the amount of on-site supervision is higher than for machines that accept credit cards only.
- An ATPM that accepts cash would probably cost between \$100,000 and \$150,000 to purchase. Credit card-only machines are expected to cost \$40,000 to \$60,000. These costs do not include civil or system integration costs to put the ATPMs into use, nor the personnel cost to supervise and maintain the machines.

Toll vendor costs

WSDOT contracts with two toll vendors to collect tolls on the TNB.

- * TransCore operates the cash toll booths and the electronic toll collection equipment located at the TNB toll point. TNB toll payers are responsible for paying all TransCore costs, because they relate only to the TNB toll bridge.
- * Electronic Transactions Consultant Corporation (ETCC) operates the statewide customer service center and back-office systems for account management. ETCC costs are shared among toll facilities statewide based on the proportion of non-cash transactions attributable to each (the methodology was developed in consultation with legislative staff and the Washington State Office of Financial Management). TNB toll payers pay only for their share of ETCC costs.

For purposes of this study and as used in the scenario estimating tool, WSDOT estimated toll vendor costs as follows, based on current appropriations. The costs are inflated by the full IPD inflation rate.

Exhibit 14

| TNB Toll Vendor Costs | | |
|-----------------------|----|-----------|
| FY 2014 | \$ | 5,453,500 |
| FY 2015 | \$ | 5,453,500 |
| FY 2016 | \$ | 5,532,660 |
| FY 2017 | \$ | 5,614,549 |
| FY 2018 | \$ | 5,696,045 |
| FY 2019 | \$ | 5,791,056 |
| FY 2020 | \$ | 5,892,420 |
| FY 2021 | \$ | 5,999,934 |
| FY 2022 | \$ | 6,109,775 |
| FY 2023 | \$ | 6,222,642 |
| FY 2024 | \$ | 6,338,510 |
| FY 2025 | \$ | 6,455,447 |
| FY 2026 | \$ | 6,574,718 |
| FY 2027 | \$ | 6,695,656 |
| FY 2028 | \$ | 6,818,009 |
| FY 2029 | \$ | 6,943,257 |
| FY 2030 | \$ | 7,070,847 |

Source: WSDOT

Potential increases in toll vendor costs

For the future, the most significant potential cost increases for the TNB are likely to result from upcoming changes in vendor contracts. In addition, with no new toll facilities expected to come on-line until the 2015-17 biennium, any increases in toll collection costs will be borne by existing toll payers.

The current vendor contract for the CSC is scheduled to terminate June 30, 2014. The contract allows for two, 2-year extensions expiring in 2018. Current vendor expenditures reflect reductions in accordance with a settlement agreement. WSDOT has stated that current payments to the CSC vendor may not be covering the vendor's costs. WSDOT is in the process of evaluating options regarding contract extension, renegotiation, and the timing of competitively rebidding all or a portion of the contract.

Toll operations costs

Toll operations costs are WSDOT's toll oversight and administration costs, including costs for salaries and benefits, consultant services, credit card and bank fees, purchase of transponders for resale, and overhead such as rent, utilities and mailing expenses.

For purposes of this study and as used in the scenario estimating tool, WSDOT has estimated toll operations costs as follows. The costs are inflated by the full IPD inflation rate.

Exhibit 15

| WSDOT Toll Operations Costs | | |
|------------------------------------|----|-----------|
| FY 2014 | \$ | 3,675,600 |
| FY 2015 | \$ | 3,640,400 |
| FY 2016 | \$ | 3,693,242 |
| FY 2017 | \$ | 3,747,905 |
| FY 2018 | \$ | 3,802,307 |
| FY 2019 | \$ | 3,865,731 |
| FY 2020 | \$ | 3,933,395 |
| FY 2021 | \$ | 4,005,164 |
| FY 2022 | \$ | 4,078,486 |
| FY 2023 | \$ | 4,153,829 |
| FY 2024 | \$ | 4,231,175 |
| FY 2025 | \$ | 4,309,234 |
| FY 2026 | \$ | 4,388,852 |
| FY 2027 | \$ | 4,469,582 |
| FY 2028 | \$ | 4,551,257 |
| FY 2029 | \$ | 4,634,864 |
| FY 2030 | \$ | 4,720,035 |

Source: WSDOT

Bridge insurance costs

WSDOT purchases TNB bridge insurance for two purposes: property damage and loss of revenue. For FY 2014, total property damage risk coverage was \$500 million, which included loss of revenue coverage at \$62 million. The coverage is subject to a \$10 million deductible and a \$10 million earthquake limit.

Actual insurance costs paid are considerably less than originally projected. However, since FY 2011 the annual cost of the TNB insurance policy has risen slightly.

| Exhibit 16 | TNB Insurance | | |
|-------------------------|----------------|----------------|--------------|
| | 2002 Estimated | 2005 Estimated | Actual |
| CY (12/31/07 to 7/1/09) | \$ 7,849,000 | \$ 7,017,000 | \$ 1,359,135 |
| FY 2010 | \$ 3,630,000 | \$ 3,421,000 | \$ 1,599,434 |
| FY 2011 | \$ 3,722,000 | \$ 3,557,000 | \$ 1,462,765 |
| FY 2012 | \$ 3,823,000 | \$ 3,703,000 | \$ 1,486,315 |
| FY 2013 | \$ 3,927,000 | \$ 3,903,000 | \$ 1,557,190 |
| FY 2014 | \$ 4,039,000 | \$ 4,053,000 | \$ 1,589,615 |

For purposes of this study and as used in the scenario estimating tool, WSDOT estimated bridge insurance costs as follows. The FY 2014 level of \$1.75 million reflects the appropriation. The insurance policy for FY 2014 was executed in June 2013, after the budget was adopted and the final cost was less than the appropriation. The costs shown below are inflated by the full IPD inflation rate.

Exhibit 17

| TNB Bridge Insurance Costs | |
|----------------------------|--------------|
| FY 2014 | \$ 1,750,000 |
| FY 2015 | \$ 1,750,000 |
| FY 2016 | \$ 1,775,402 |
| FY 2017 | \$ 1,801,680 |
| FY 2018 | \$ 1,827,831 |
| FY 2019 | \$ 1,858,320 |
| FY 2020 | \$ 1,890,847 |
| FY 2021 | \$ 1,925,348 |
| FY 2022 | \$ 1,960,595 |
| FY 2023 | \$ 1,996,814 |
| FY 2024 | \$ 2,033,995 |
| FY 2025 | \$ 2,071,519 |
| FY 2026 | \$ 2,109,793 |
| FY 2027 | \$ 2,148,602 |
| FY 2028 | \$ 2,187,864 |
| FY 2029 | \$ 2,228,055 |
| FY 2030 | \$ 2,268,998 |

Source: WSDOT

Increasing insurance costs

WSDOT forecasted the cost of insurance for the TNB to increase from \$1.5M in FY 2013 to \$1.75M in FY 2014 due to recent cost experience and feedback from providers. There are several large construction projects in the Puget Sound area planned or underway, and insurers perceive that insuring multiple large projects in the same geographic area increases risk for the insurer.

Maintenance and preservation (R&R) costs

WSDOT's Olympic Region staff have projected maintenance and preservation costs for the new bridge, the roadway, and portions of the tolling system through 2030.

Maintenance costs are operating costs needed to keep the facility in current working order, such as bridge deck repair, sweeping and cleaning, snow and ice control, pavement striping and signing, and mechanical system maintenance.

Preservation or R&R (renewal and replacement) costs are capital costs to preserve or extend the life of a facility, such as resurfacing the bridge deck and replacing key components of the tolling system.

State law requires both maintenance and preservation costs to be paid by TNB toll payers while debt service is still owed on the bridge.

Maintenance costs of a facility increase with the age of the facility. Preservation costs are less linear in their growth, as various systems or facility elements need preservation work at various times.

Exhibit 18 below shows WSDOT's current estimates of maintenance and preservation costs for the new TNB through 2030, the date debt service is expected to be fully paid. FY 2014 and FY 2015 align with current appropriations, except for the \$119,735 in FY 2015 preservation costs. While this represents the cost of federal-mandated bridge inspections, the Legislature has not appropriated funds to cover these costs. Beginning in FY 2016 and as shown below, maintenance costs are inflated by the full IPD inflation rate after FY 2017. Preservation (R&R) costs are inflated by the Construction Cost Index (CCI).

Exhibit 18

| | Maintenance | Preservation (R&R) |
|--------------|---------------------|-----------------------|
| FY 2014 | \$ 270,000 | \$ - |
| FY 2015 | \$ 305,000 | \$ 119,735 |
| FY 2016 | \$ 340,000 | \$ 4,543,189 |
| FY 2017 | \$ 375,000 | \$ 1,002,473 |
| FY 2018 | \$ 380,443 | \$ 3,078,198 |
| FY 2019 | \$ 386,789 | \$ 12,496 |
| FY 2020 | \$ 393,559 | \$ 118,364 |
| FY 2021 | \$ 400,740 | \$ 2,685,064 |
| FY 2022 | \$ 408,077 | \$ 1,128,348 |
| FY 2023 | \$ 415,615 | \$ 3,436,681 |
| FY 2024 | \$ 423,354 | \$ 47,449 |
| FY 2025 | \$ 431,164 | \$ 2,768,062 |
| FY 2026 | \$ 439,130 | \$ 1,463,344 |
| FY 2027 | \$ 447,208 | \$ 1,903,942 |
| FY 2028 | \$ 455,380 | \$ 720,359 |
| FY 2029 | \$ 463,745 | \$ 599,489 |
| FY 2030 | \$ 472,267 | \$ 2,573,403 |
| | | |
| TOTAL | \$ 6,807,473 | \$ 26,200,595 |

Source: WSDOT

12.5% sufficient minimum balance requirement

While the TNB bonds do not have a reserve or coverage ratio requirement (unlike facilities funded with toll-backed bonds), the Transportation Commission decided prudent fiscal policy called for some level of ending balance in the TNB Account, to ensure sufficient toll revenue will be available to pay costs if toll collections fall below projections. The Commission began discussions with the Office of the State Treasurer (OST) in 2009 regarding the sufficient minimum balance (SMB) requirement, and adopted a SMB policy in 2010.

In 2009, the OST recommended that the Commission set tolls to generate net revenues equal at least 110% of debt service. The OST also recommended a “sufficiency” requirement, such that tolls generate revenues sufficient to cover all expected expenditures in a given year (already required by law). This approach focused on coverage requirements rather than reserves because of the rapid growth in debt service over the life of the bonds. At the time of the OST’s recommendation in December, 2009, it was estimated that their proposal would have generated a 23% fund balance after all costs were covered in FY 2011, and would have driven a \$1.00 toll increase to meet the recommended reserve level.

The OST’s recommendations were intended to provide the same levels of coverage that tolled facilities generally are required to achieve. They thought this was especially important, saying investors would look to Washington’s experience with the TNB when evaluating subsequent proposals to finance the SR 520 bridge or other tolled facilities using toll-backed bonds. The SR 520 bonds that eventually were sold had debt service coverage requirements and other more stringent reserve requirements specified in the Master Bond Resolution and identified in bond covenants, which locked the State into a legal contract with investors.

Such was not the case with the TNB, where the determination of appropriate reserves is a policy decision, and not one driven by bond covenants. The 2002 TNB financial plan assumed debt service coverage of 1.00 beginning in 2010, meaning tolls were expected to be set to cover 100% of costs. This was legally possible because the TNB financing was legally backed with Motor Vehicle Account funds and not toll revenues; the legal bond documents for the TNB do not mention toll revenues.

Because there was no reserve or coverage ratio requirement in the TNB bond covenants, tolls originally were set to cover costs as required in law. To contemplate any type of reserve or coverage at the start of tolling would have resulted in higher tolls. However, the Commission ultimately deemed it prudent to create a policy for some level of ending balance, in order to provide some fiscal cushion in the financial plan. This led to the adoption of the Sufficient Minimum Balance policy.

The Commission adopted the TNB Toll Setting Policy on March 17, 2010. It required the Commission to “set rates in a manner so as to maintain an established Sufficient Minimum Balance (SMB) that is equivalent to 45 days of working capital”, and that it will “not be less than approximately 12.5% of annual total TNB costs”. The purpose of the SMB is to cover revenue shortfalls and legitimate cost increases, which include debt service payments, operating and maintenance expenditures, and deferred sales tax. (<http://www.wstc.wa.gov/HighwayTolling/documents/FinalTNBTollSettingPolicy.pdf>).

The Commission amended the SMB policy in February 2013 to clarify how the SMB level is established. Rather than requiring the SMB be “12.5% of total annual costs”, it was modified to be more responsive to the fluctuations of the fund balance throughout the year due to the varying size and timing of debt payments. The modified policy now requires that the SMB be measured on a retrospective three-month rolling average fund balance.

Deferrals or loans requiring repayment by tolls

The Legislature approved two mechanisms during bridge construction and start-up to temporarily reduce the expenditures tolls had to finance, but which state law says must be repaid.

Sales tax deferral (\$57.6 million), first payment due December 31, 2018

The Legislature enacted [RCW 47.46.060](#) in 1998, which allowed WSDOT to defer payment of state and local sales taxes on TNB construction costs until five years after the commencement of tolling, and then to pay back in equal payments over the course of ten years. A total of \$57.6 million in deferred sales tax is to be repaid over ten years to the state's general fund.

This tax deferral was intended to allow toll revenue to grow before the taxes were paid, and was expected to help keep the opening toll at no more than \$3.00.

A memo from the State Attorney General in October 2010 confirmed that tolls could be used to repay the deferred sales tax, because "the tax deferral contributed directly to the financing of the tolled facility."

The first payment on the deferred sales taxes was originally due on December 31, 2012. However, in an effort to postpone the need for toll payers to pay this tax bill, the 2012 Legislature passed SSB 6073 which further deferred sales tax repayment by another six years. The first payment now due on December 31, 2018.

2007 loan from the Motor Vehicle Account (\$5.288 million)

In 2007, the Legislature approved a \$5.288 million transfer from the Motor Vehicle Account to the TNB Account to help cover operating expenditures and establish a minimal level of reserves before tolling started (ESSB 1094, Section 1005(15)). The Legislature apparently intended this transfer to be considered a loan, to be repaid from tolls. However, while it may have been considered a loan during legislative discussions, but no specific language appears in statute saying this \$5.288 million is a loan.

Subsequent legislative efforts continued to treat this transfer as a loan. Before repayment began, the Legislature identified non-toll revenues to repay the \$5.288 million. In 2010, the Legislature enacted ESSB 6499 (RCW 46.63.160(9)) which identified the TNB toll civil penalty as the revenue source to pay back the \$5.288 million, until June 30, 2013.* An adopted committee amendment offered by Senator Derek Kilmer in 2010 to PSSB 6499 stated that beginning on July 1, 2011, civil penalties deposited into the Tacoma Narrows toll bridge account must be used initially for repayment of funds *loaned from the Motor Vehicle Account to the toll bridge account*. (PSSB 6499 (S-4076.3/10))

The civil penalty includes a fine of \$40, plus the original toll amount and associated fees. This civil penalty replaced toll violations. The civil penalties are issued by WSDOT, while toll violations are issued by Washington State Patrol. This new civil process added the cost of adjudication administration to the TNB Account, while at the same time reducing violation enforcement costs. The civil penalty process took effect when TNB photo tolling began in December 2011.

The Appendix (p. 87) contains a full history of the \$5.288 million loan.

* While RCW 46.63.160(9) requires civil penalties in excess of adjudication costs to go first toward repaying the \$5.288 million loan, there was no language provided in the 2011-13 budget authorizing the Treasurer's Office to make the transfer. To resume repayment of the loan with civil penalties will require an amendment in future appropriations bills, or a statutory amendment.

Other Related Cost-Efficiencies Studies

As this JTC study was underway, three related studies were being conducted to identify Toll Division cost efficiencies. These studies include the State Auditor's performance audit of the Toll Division; the Toll Division's Cost of Service study; and a WSDOT review of Toll Division operations using Lean management principles. These three studies are summarized below.

Washington's Tolling Program: Lessons Learned from Project Delays (8/2/2013) **State Auditor's Office Performance Audit**

Following a 22 year hiatus, in 2007, Washington State began collecting tolls again to pay for highway construction. A new Toll Division was created to manage toll systems and projects. Washington is one of only four states relying on statewide all-electronic tolling. The FHWA Urban Partnership grant provided \$86 million of federal funds for tolling system development on the SR 520/I-90 corridor. The original agreement between WSDOT and FHWA provided for a September 2009 start date of SR 520 tolling. Tolling began on December 29, 2011.

Lessons learned:

- WSDOT must adequately plan for and manage project risk, proactively manage tolling projects, and hold vendors accountable throughout the project.
- WSDOT's executive team actions must strengthen the project management team's decision-making authority and procedures established to effectively manage the project.

Weaknesses in project risk management stemmed from:

- WSDOT managed the project as a relatively low risk engineering service project and not as a complex high risk information technology project.
- Risks identified in the project management plan were not incorporated into the RFP or vendor selection.
- Ongoing management/monitoring of vendor performance based on high level milestones not useful for monitoring the delivery of an IT project.
- When the vendor began struggling, appropriate corrective actions were not taken and contract penalties were not used effectively.

Executive team leadership needs to strengthen:

- Cross-functional collaboration among WSDOT divisions/offices with the Toll Division.
- Clarity of roles, responsibilities, and decision-making of different divisions.
- Expectations for communication protocols and unified performance outcomes.

The full audit report can be found at the following link:

<http://www.sao.wa.gov/AuditReports/AuditReportFiles/ar1010219.pdf>

WSDOT Cost of Service Analysis

The 2009 Legislature directed WSDOT to determine fixed and variable costs of key customer service account and payment method activities, and to establish a management process to report on these costs for use in potential modification of business rules. A baseline study was conducted in 2010. The Toll Division has recently analyzed quarterly data for fiscal years 2012 and 2013.

The analysis has focused on expenses paid by WSDOT rather than the actual costs incurred by the vendor. Information is available for all three currently tolled facilities, including the Tacoma Narrows Bridge.

As part of the cost of service study, WSDOT reviewed the financial statements of seven other public tolling agencies for purposes of comparing WSDOT costs to experiences elsewhere. The range of costs to operate and maintain was from \$0.33 to \$2.55. Four agencies, including WSDOT, have costs between \$0.54 and \$0.68. WSDOT's average cost per transaction to operate and maintain all of its tolled facilities was \$0.61.

For the most recent fiscal year, the cost to operate and maintain the Tacoma Narrows Bridge was \$0.66 per transaction. Shown below are the costs per transaction of toll collections for FY 2013.

Exhibit 19

Tacoma Narrows Bridge, Cost per Transaction FY 2013, Q1-Q4 Results

| Payment method | Transaction Count | Cost to Operate and Maintain | Cost to Collect |
|-----------------------|--------------------------|-------------------------------------|------------------------|
| Good to Go pass | 9,093,586 | \$0.43 | \$0.30 |
| Tollbooth | 3,297,580 | \$1.20 | \$1.05 |
| Pay by Mail | 658,260 | \$1.21 | \$1.07 |
| Pay by Plate | 565,304 | \$0.53 | \$0.40 |
| Non-Revenue | 3,650 | \$0.38 | \$0.24 |
| Short Term Account | 563 | \$6.94 | \$6.71 |
| Weighted Average | 13,618,943 | \$0.66 | \$0.52 |

Source: WSDOT

WSDOT review of the Toll Division operations using Lean management principles

ESHB 5024 (2013) directed the Toll Division to review its operations using Lean management principles to eliminate inefficiencies and redundancies and to identify ways to conduct business more effectively.

Lean management is a culture organizations use to eliminate waste and reduce costs while improving quality. It is a process of continuous improvement that examines individual processes with high potential to be more effective and less costly, and to incrementally improve over time.

Key findings relating to toll collections costs include the following:

1. Cost to collect: Compared to peer agencies, WSDOT's cost per transaction across payment method and facility is reasonable. Two areas warrant further Lean review: TNB cash collection and the use of short term accounts for all facilities.
2. Increased emphasis on transponder accounts: Transponder accounts are the most cost effective method of toll collection. The Toll Division will seek to increase marketing of transponders.
3. Reductions in WSDOT staff: Each position was evaluated to validate the function served and to determine long-term need. Four positions were identified for elimination.
4. Reductions in consultant staff: Consultant activities were evaluated to identify ongoing work better performed by WSDOT staff. Three and one-quarter positions were identified for elimination.
5. Operational efficiencies: Lean workshops were held and 70 potential Lean projects were identified. Three Lean reviews are currently underway.
6. Re-evaluation of toll program funding needs: WSDOT reviewed the impacts of the five percent budget cuts made in the 2013-15 budget and determined that the cuts are not sustainable.

The report includes results to-date of Lean analyses of three operational processes, described below:

1. Pay by Plate fee reversals. For customers without a transponder or whose transponder is not working, tolls are posted to their account based on a license plate image, plus an additional \$0.25 fee. There have been more than 600 requests to reverse this fee. The reversal process is labor intensive: the average customer contact costs \$9.15 to reverse \$1.50 in fees (six \$0.25 fees). An audit of past reversal calls showed a majority of reversal requests stem from customer transponder or account errors. The Lean review recommended education to reduce customer error, empowering customer service representatives to process reversals without referral, and streamlining the gathering of back-up documentation. The goal is to reduce processing time by 40 percent, saving \$27,000.
2. Escalated customer inquiries. Each day WSDOT receives about one new customer inquiry that has been escalated from the Customer Service Center (CSC). On average, three hours of staff time is needed to respond to each inquiry. The Lean objective is to reduce the number of escalated inquiries by 40 percent, saving \$15,600 in staff time annually. Process improvements will focus on customer education and broadening the authority of CSC staff to resolve customer complaints.
3. Image review of photo enforced transactions. In Pay By Mail transactions, a license plate number is retrieved using optical character recognition software as a vehicle travels on a photo-tolling facility. A third of these transactions require manual review; 1.1% of the images are rejected. The rejections resulted uncollected revenue of about \$1.6 million annually. Analysis suggests that process improvements can reduce rejections and increase revenues by 10 to 20 percent. Improvements will include adjusting light sensors on roadside toll cameras; improved resources for reading specialty license plates; streamlining the actions required of image reviewers; establishing standard operating procedures for all image review activities; and customer education on issues such as obstructed plates or missing front plates.

Revenue Factors Affecting Toll Rates

Revenue Factors Affecting Toll Rates

State law requires tolls to be set sufficient to pay debt service and O&M costs for the bridge, preservation costs, insurance costs, and the deferred construction sales and use tax. Other revenues also contribute to the financial plan, including fees and fines, transponder sales, and miscellaneous revenues, and appropriations approved by the Legislature.

Toll revenues are affected by traffic volumes across the bridge, and as a result, traffic forecasts are an important factor considered by the Transportation Commission when setting toll rates.

Sources of revenue in financial plan

In 2002, two sources of revenue were identified in the financial plan – tolls and interest earnings. Today TNB revenue also includes violation fines or civil penalties, revenue from the sale of transponders, and miscellaneous fees such as the customer service fee or a reprocessing fee. In addition are the loans and transfers authorized by the Legislature. These additional revenue sources represent 7.4% of all facility revenues through June 2013, with toll revenues and interest earnings representing the balance.

Exhibit 20

| Tacoma Narrows Bridge Operating Sources and Uses of Funds <i>nominal dollars in millions</i> | | |
|---|-----------------------------|-----------------------------|
| | July 2013 Financial Plan | July 2002 Financial Plan |
| | <i>Through June 2013</i> | |
| Sources of Funds | | |
| Miscellaneous Revenue | \$4.1 | - |
| Interest Earnings | 1.4 | 1.6 |
| Fines and Fees | 7.3 | - |
| Transponder Sales | 3.3 | - |
| Toll Revenue | 266.5 | 366.1 |
| Loan from Motor Vehicle Account | 5.3 | - |
| Transfers from Other Accounts | 1.3 | - |
| Total Sources of Funds | \$289.2 | \$367.7 |
| Debt Service | (\$207.7) | (\$262.3) |
| Remaining Funds | \$81.4 | \$105.5 |
| Uses of Funds | | |
| WSDOT Management Costs | \$18.2 | \$21.9 |
| Toll Systems Operations (Vendor Contract) | 42.8 | 33.2 |
| Insurance | 10.1 | 23.0 |
| Enforcement and Security | 1.4 | 5.1 |
| Maintenance | 1.2 | 6.3 |
| Deferred Sales Tax* | - | 9.0 |
| Total Uses of Funds | \$73.8 | \$98.4 |
| <i>The 2002 Financial Plan anticipated the bridge opening April 2007. Actual bridge opening was July 2007</i> | | |
| *Deferred sales tax is a capital expenditure, to be repaid by tolls. | | |

Source: WSDOT

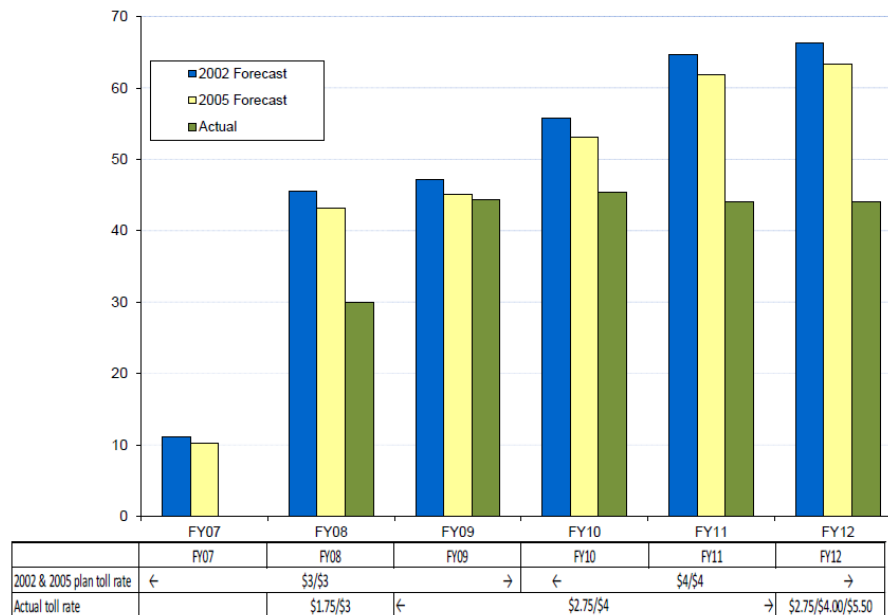
Toll revenue collections, actuals compared to forecasts

Exhibit 21 below shows the actual TNB toll revenues through FY 2012, compared to the 2002 and 2005 forecasts. The green bar shows actual collections, which have been consistently below 2002 and 2005 projections each year.

The difference in FY 2012 is substantial – approximately \$44 million collected, compared to a 2002 projections of about \$68 million, and a 2005 projection of \$65 million. The shortfall is due to a combination of lower tolls and lower traffic volumes in 2012 than were projected in 2002 and 2005.

Exhibit 21

Tacoma Narrows Bridge Toll Revenue
Actual vs. 2002 Forecast and 2005 Forecast
nominal dollars in millions



Source: WSDOT

Appropriations to the TNB

Legislative appropriations have provided a limited revenue source to help cover TNB costs. Since 1999, the Legislature has approved two such appropriations:

- 1999 -- \$50 million was appropriated as a cash contribution for the development of the public private initiatives (PPI) project at Tacoma Narrows. The funds were to be used for the acquisition of right of way and studies of the existing bridge, including the purchase of equipment to conduct the studies. (ESHB 1125, Section 219 (9)) In 2000, the Legislature altered the uses of the \$50 million, saying the funds were for costs associated with the location, development, design, right of way, and construction of the TNB improvements. (E2SSB 6499, Section 219 (8)(a)(b))
- 2006 – The Legislature appropriated \$1.3 million from the Multimodal Transportation Account, in order to allow a toll discount of up to 50% for toll payers using transponders while the existing bridge was retrofitted. The \$1.3 million was characterized by the Legislature as a state contribution to the project, not requiring repayment. (SSB 6241, 2006; and ESHB 1094, 2007). The 2006 Budget Highlights note that as a result of this appropriation, “It is estimated that the initial toll for electronic toll payers will be \$1.50 instead of \$3.00.” On April 30, 2007, the Transportation Commission adopted the initial toll at \$1.75 for electronic toll payers, which was the toll recommended by the Citizens Advisory Committee.

Traffic forecasts

Traffic volumes affect the level of toll collections. As a result, traffic forecasts are an essential element considered by the Transportation Commission in setting toll rates.

The 2002 financial plan forecasted annual traffic on the TNB through 2030. It did not, however, predict the 2007-2009 economic recession, which contributed to lower-than-forecasted traffic as people lost jobs and stopped driving over the bridge.

Traffic levels have also been impacted by trip consolidation, as people reduced trips across the bridge in order to reduce the number of tolls paid, and the reduction in recreational trips across the bridge as business and amenities on the Peninsula have grown.

CDM Smith prepares a new traffic and revenue estimate before each quarterly transportation revenue forecast meeting. Their figures are used by the Transportation Commission to evaluate the TNB financial plan, as they decide on future toll rates.

Exhibit 22 below shows the historical traffic forecasts, and *actual* traffic volumes indicated in italics. Above the red line are the estimates used in the original 2002 finance plan and the 2005 update. These numbers were assumed in the financial plan used to structure the bond sales. The Exhibit shows that traffic levels have been consistently lower than originally projected in the 2002 finance plan and the 2005 update. For example, the 2009 forecast said 2012 traffic would be about 16.1 million, while in fact it was 13.9 million. The Exhibit also shows that traffic has declined in recent years. The lower traffic meant fewer tolls were paid and less toll revenue was collected than forecasted.

Exhibit 22 Forecasted and *actual* TNB traffic

| | FY 2008 | FY 2009 | FY 2010 | FY 2011 | FY 2012 | FY 2013 |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 2002 T&R Study | 15,010,000 | 15,341,000 | 15,397,000 | 15,794,000 | 16,202,000 | 16,132,000 |
| 2005 T&R Update | 14,311,000 | 14,670,000 | 14,710,000 | 15,084,000 | 15,468,000 | 15,664,000 |
| Nov 2007 Forecast | 13,738,058 | 14,471,000 | 14,469,000 | 14,893,000 | 15,272,000 | 15,564,000 |
| Nov 2008 Forecast | 13,858,606 | 14,259,848 | 14,111,314 | 14,892,799 | 15,282,103 | 15,564,000 |
| Nov 2009 Forecast | | 13,900,642 | 14,719,333 | 15,512,149 | 16,087,746 | 16,251,000 |
| Nov 2010 Forecast | | | 14,252,567 | 14,787,266 | 15,679,037 | 16,298,693 |
| Nov 2011 Forecast | | | | 14,055,030 | 14,143,768 | 14,457,000 |
| Nov 2012 Forecast | | | | | 13,943,073 | 13,849,623 |
| Nov 2013 Forecast | | | | | | 13,861,044 |

Italics indicate actual traffic levels

Source: WSDOT

For purposes of this study, three levels of traffic were evaluated: the current official traffic forecast (September, 2013); a zero-growth scenario where traffic is flat through 2030; and a pessimistic scenario where traffic falls every year by 0.8%.

Exhibit 23 below compares traffic levels under four scenarios:

- The WSA 2005 traffic update is from the 2005 Wilbur Smith and Associates (WSA) (now CDM Smith) traffic and revenue update. This was done to update their 2002 estimates, and is the traffic level used in the 2005 official finance plan for the TNB.
- The current traffic forecast reflects the official September, 2013 forecast provided by the official Transportation Revenue Forecast Council.
- The zero growth traffic scenario is the flat-traffic scenario used in this study. It shows traffic remaining at the 2014 level through 2030.
- The pessimistic traffic scenario is the final traffic scenario used in this study. It shows an annual traffic decline of 0.8% each year through 2030.

Exhibit 23

| Current traffic forecast and two traffic scenarios compared to official 2005 traffic forecast | | | | | | | | | |
|--|----------------------------|-----------------------------|---------------------|---------------------------------|---------------------|-----------------------------|---------------------------------|---------------------|-----------------------------|
| | WSA 2005 traffic update | Current traffic forecast | % of 2005 update | Zero growth traffic scenario | % of 2005 update | % of current forecast | Pessimistic traffic scenario | % of 2005 update | % of current forecast |
| 2014 | 16,023,500 | 13,753,000 | -14% | 13,753,000 | -14% | 0% | 13,753,000 | -14% | 0% |
| 2015 | 16,388,500 | 14,004,000 | -15% | 13,753,000 | -16% | -2% | 13,642,976 | -17% | -3% |
| 2016 | 16,279,000 | 14,410,000 | -11% | 13,753,000 | -16% | -5% | 13,533,832 | -17% | -6% |
| 2017 | 16,461,500 | 15,005,000 | -9% | 13,753,000 | -16% | -8% | 13,425,562 | -18% | -11% |
| 2018 | 16,644,000 | 15,352,000 | -8% | 13,753,000 | -17% | -10% | 13,318,157 | -20% | -13% |
| 2019 | 16,863,000 | 15,728,000 | -7% | 13,753,000 | -18% | -13% | 13,211,612 | -22% | -16% |
| 2020 | 17,045,500 | 16,177,000 | -5% | 13,753,000 | -19% | -15% | 13,105,919 | -23% | -19% |
| 2021 | 17,301,000 | 16,418,000 | -5% | 13,753,000 | -21% | -16% | 13,001,072 | -25% | -21% |
| 2022 | 17,812,000 | 16,720,000 | -6% | 13,753,000 | -23% | -18% | 12,897,063 | -28% | -23% |
| 2023 | 17,556,500 | 16,983,000 | -3% | 13,753,000 | -22% | -19% | 12,793,886 | -27% | -25% |
| 2024 | 18,104,000 | 16,937,000 | -6% | 13,753,000 | -24% | -19% | 12,691,535 | -30% | -25% |
| 2025 | 18,359,500 | 17,082,000 | -7% | 13,753,000 | -25% | -19% | 12,590,003 | -31% | -26% |
| 2026 | 18,542,000 | 17,203,000 | -7% | 13,753,000 | -26% | -20% | 12,489,283 | -33% | -27% |
| 2027 | 18,724,500 | 17,342,000 | -7% | 13,753,000 | -27% | -21% | 12,389,369 | -34% | -29% |
| 2028 | 18,907,000 | 17,482,123 | -8% | 13,753,000 | -27% | -21% | 12,290,254 | -35% | -30% |
| 2029 | 19,126,000 | 17,623,378 | -8% | 13,753,000 | -28% | -22% | 12,191,932 | -36% | -31% |
| 2030 | 19,308,500 | 17,765,775 | -8% | 13,753,000 | -29% | -23% | 12,094,396 | -37% | -32% |

This exhibit compares the four traffic scenarios. It shows that

- WSA projected traffic to peak at 19.3 million trips in 2030. This is 1.5 million more trips than the current forecast, and 6-7 million more trips than the zero growth or pessimistic scenarios.
- If traffic remains flat through 2030, this will yield 2030 traffic levels a third lower than the 2005 update, and nearly 25% lower than the current official forecast.
- The pessimistic scenario yields 2030 traffic levels that are nearly 40% lower than the 2005 update, and a third lower than the official traffic forecast.

Evaluating Potential Internal Refinance Opportunities

A key element of this study was the evaluation of potential for “internal refinance opportunities” to limit future toll rate increases on the Tacoma Narrows Bridge. The JTC-approved workplan describing the study defined internal refinance opportunities as changes that do not require the State Treasurer to re-issue debt, such as identifying non-toll revenue to help defray costs, reducing costs paid by tolls, or other potential alternatives. The workplan called for the staff workgroup to identify potential alternatives and to evaluate their potential to reduce toll increases.

The Scenario Estimating Tool

In order to undertake the analysis, the staff workgroup worked with WSDOT staff to develop a Scenario Estimating Tool, and used it to evaluate a number of “what if” scenarios and their potential impact on toll rates through 2030 and beyond. The tool is an Excel spreadsheet. It is not a rate-setting tool, but allows policy makers to evaluate the relative scale of impacts of various scenarios.

Key elements of the tool include the following, all of which can be modified to evaluate the impact of changes on potential toll rates:

- traffic
- revenues
- expenses
- the sufficient minimum balance as required by the Transportation Commission, and
- the blended toll rate.

Traffic estimates. The tool allows the user to evaluate any number of traffic scenarios. In this study, and because traffic levels are such an important driver of toll revenues, three traffic scenarios were evaluated:

- the current official traffic forecast, based on the official September, 2013 transportation revenue forecast;
- a zero-growth scenario, where traffic is flat through 2030; and
- a pessimistic scenario, where is assumed to fall every year by 0.8%. This -0.8% reflects the average traffic growth on the bridge during the first five years of operation, a period that includes a significant economic recession.

Caveats. In evaluating results of the scenario estimating tool, it is important to keep in mind the following caveats and assumptions:

- the tool does not adjust for elasticity (traffic is not adjusted due to higher or lower toll rates);
- expenses increase at the full inflation rate, not half as in the current TNB financial plan;
- the toll rate is expressed as a blended rate (a weighted average of all toll rates);
- analysis begins with FY 2016 rates, because the Transportation Commission has already set toll rates for FY 2014 and FY 2015; and
- results are rough estimates, suggesting general trends but requiring further analysis for policy decisions.

While a very useful tool without which the study could not have been completed, the Scenario Estimating Tool is not a complex model. Furthermore, it was used to look 17 years into the future, so its results are speculative. By contrast, the Transportation Commission sets tolls one to two years in advance, so that rates are responsive to dynamic economic factors. This allows the Commission to achieve more accuracy and precision when setting toll rates.

Please see the Appendix, p. 88 for a detailed description of the elements in the Scenario Estimating Tool.

Description of Scenarios Evaluated in this Study

Staff used the scenario estimating tool to evaluate a base case and seven scenarios under the three traffic scenarios, as described below. Results are described in terms of a “blended” toll rate, which is a weighted average of all toll rates. As a result, the blended rate is higher than the *Good To Go!* rate.

Base case. The base case reflects a current-law scenario. It illustrates potential toll rates under the three traffic scenarios, assuming tolls pay all costs as in current law, and costs are inflated by the full inflation rate.

Then seven different alternatives were analyzed. These seven alternatives, or scenarios, varied the level of expenses paid by tolls, or added sources of non-toll revenue that could contribute to payment of expenses otherwise the responsibility of TNB toll payers. The tool was used to estimate the effect on potential toll rates, and the level of additional revenue, needed to accomplish each scenario.

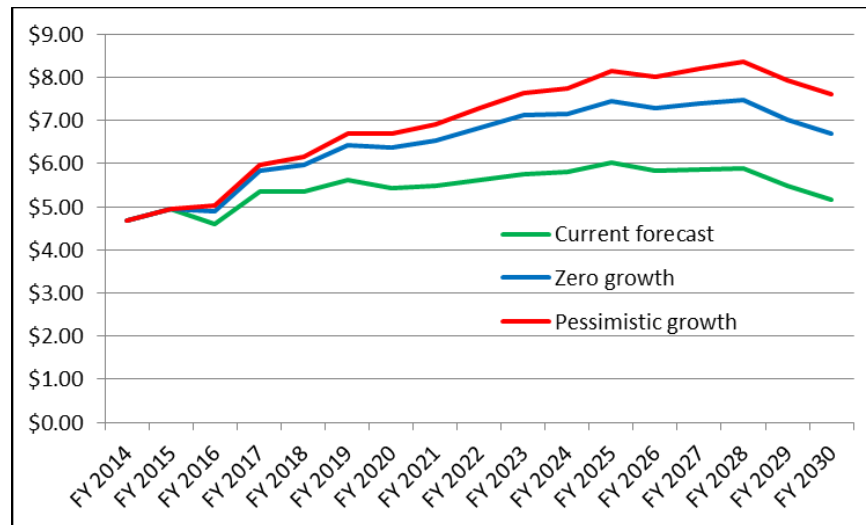
- Scenario 1.** A non-toll revenue source pays the deferred construction sales tax.
- Scenario 2.** Effect on tolls of a 5% cut in toll vendor and toll operations budgets.
- Scenario 3.** Effect on tolls if a non-toll revenue source pays preservation costs for the new bridge.
- Scenario 4.** Tolls only pay debt service – effect on tolls and the revenue source that pays the rest of the facility’s costs. Evaluated both as a “gift” from the other revenue source, and as a loan to be repaid by toll payers beginning in 2031.
- Scenario 5.** Loan to keep blended toll below \$6.00, with loan to be repaid by toll payers beginning in 2031.
- Scenario 6.** Loan to offset the effect of increasing debt service, with loan to be repaid by toll payers beginning in 2031.
- Scenario 7.** “Worst case” scenario. Is it likely tolls will reach double digits?

Base case scenario

The base case reflects a current-law scenario. It illustrates potential toll rates under the three traffic scenarios, assuming tolls pay all costs as in current law, and costs are inflated by the full inflation rate.

Base case -- Potential estimated blended toll rates

(Full IPD, tolls pay costs as in current law, three traffic scenarios)



Results: Through 2030, under the current traffic forecast, the blended toll is not likely to exceed \$6.00. In the pessimistic scenario, even if traffic fell every year by 0.8% and inflation is double the rate in the current TNB finance plan, the maximum blended toll is not likely to reach \$9.00.

- **Current traffic forecast:** The blended toll ranges between \$5.00 and \$6.00 through 2030.
- **Zero growth traffic scenario:** The blended toll ranges between \$6.00 and \$7.00 from 2018 – 2022, and between \$7.00 and \$7.50 through 2030.
- **Pessimistic traffic scenario:** The blended toll ranges between \$6.00 and \$7.00 through 2021; and between \$7.00 and \$8.50 through 2030.

The table below summarizes the results of the seven scenarios. It assumes the motor vehicle account is the non-toll revenue source. Each scenario will be discussed on the following pages. In all cases, it is the responsibility of the Transportation Commission to set toll rates.

| Scenario | | Potential impact on tolls (reduction from base case) | Potential impact on motor vehicle account | Other considerations |
|-------------|--|--|--|---|
| 1 | The \$58 million deferred sales tax is repaid by non-toll revenues, FY 2019-2028 | 35 – 45 cents | \$58 million, or about \$11 million a biennium | SR 520 deferred sales tax is \$144 million, FY 2022 – FY 2031. If also repaid by motor vehicle account, costs \$201 million, or \$30 - \$40 m/biennium |
| 2 | 5% cut in toll vendor and toll operations budget | 5 cents | | Already enacted in FY 2013-15 budget |
| 3 | Non-toll revenues pay preservation costs of \$26 million through 2030 | 10 - 15 cents on average | \$26 million | Users of other tolled facilities will want similar treatment. |
| 4 “gift” | Tolls only pay debt service – gift from motor vehicle account pays all other costs | \$1.10 - \$1.45 on average, FY 2016 - 2030 | \$276 million FY 2016 – 2030, averaging \$30 - \$42 million/biennium | <ul style="list-style-type: none"> • Users of other tolled facilities will want similar treatment. • Impact on other projects and programs funded from the motor vehicle account |
| 4 “loan” | Tolls only pay debt service; loan from motor vehicle account pays other costs; repayment toll paid 2031-2035 | Same savings as above; repayment toll averages \$3.70 - \$5.75 | \$276 million FY 2016 – 2030, avg \$30 - \$42 million/biennium repaid beginning 2031 | <ul style="list-style-type: none"> • Users of other tolled facilities will want similar treatment • Impact on other projects and programs funded from the motor vehicle account |
| 5 “loan” | Maximum \$6.00 toll; loan from motor vehicle account; repayment toll paid 2031 - 2035 | 80 cents - \$1.30 average savings; repayment toll averages \$3.05 - \$5.00 | \$161 - \$242 million Repaid beginning 2031 | <ul style="list-style-type: none"> • Affects only zero growth and pessimistic traffic scenarios because tolls don’t exceed \$6.00 in current traffic forecast • Users of other tolled facilities will want similar treatment • Impact on other projects and programs funded from the motor vehicle account |
| 6 “loan” | Level debt service beginning in FY 2016; loan from motor vehicle account; repayment toll paid 2031 - 2035 | \$1.00 - \$1.30 average savings; repayment toll averages \$3.10 - \$4.75 | \$231 million Repaid beginning 2031 | <ul style="list-style-type: none"> • Loan from motor vehicle account would offset the effect of escalating debt service; • Impact on other projects and programs funded from the motor vehicle account |
| 7 | Likelihood of double digit tolls | Not likely to reach double digit tolls | NA | Extremely unlikely scenarios may result in blended toll slightly above \$10 in the last 1-3 years of debt service payment: <ul style="list-style-type: none"> • traffic falling 2% every year; or • 9% annual inflation; or • 1.5% annual traffic decline plus 5% annual inflation |

Scenario 1: Deferred sales tax repayment (\$57.6 million)

Scenario 1 evaluated the potential impact on tolls if the Legislature used \$57.6 million in non-toll revenues to pay the deferred sales tax on TNB construction.

The Legislature enacted [RCW 47.46.060](#) in 1998, which allowed WSDOT to defer payment of state and local sales taxes on TNB construction costs until five years after the commencement of tolling, and then to pay back in equal payments over the course of ten years. A total of \$57.6 million in deferred sales tax is to be repaid over ten years to the state's general fund.

This tax deferral was intended to allow toll revenue to grow before the taxes were paid, and was expected to help keep the opening day toll at no more than \$3.00.

The first payment on the deferred sales taxes was originally due on December 31, 2012. However, in an effort to postpone the need for toll payers to pay this tax bill, the 2012 Legislature passed SSB 6073 which further deferred sales tax repayment by another six years. The first payment is now due on December 31, 2018.

Results: This could affect blended tolls by 35 to 45 cents between FY 2019 and FY 2028, depending on the traffic scenario. This would be the potential savings from the base case (not from current toll rates). It would be up to the Transportation Commission to decide how to manage the toll rates. They would be considering many other changes in costs and revenue that cannot be foreseen at this time.

- **Current traffic forecast:** Average impact of 35 cents, FY 2019 – 2028.
- **Zero-growth traffic scenario:** Average impact of 43 cents, FY 2019 – 2028.
- **Pessimistic traffic scenario:** Average impact of 46 cents, FY 2019 -2028.

Policy considerations:

1. **Sets a precedent.** Adopting this policy for the TNB would set a precedent for other tolled facilities.
2. **Cost to other fund source.** The Legislature would have to weigh this cost against other expenditures funded from that revenue source. For the TNB, it would cost other transportation fund sources \$57.6 million over 10 years. If the same policy were adopted for the SR 520 project, it would add nearly \$144 million in costs over 10 years. The table at right shows the potential \$201 million impact of Scenario 1.
3. **Risk of federal lawsuit.** Fully exempting state projects from sales tax would run afoul of the U.S. Supreme Court's decision in *Washington v. United States* (460 U.S. 536 (1983)) (see Appendix page 90 for summary). However, the Department of Revenue has identified an alternative of exempting labor costs from the sales tax. This would tax state highway construction projects in the same manner as federal and local projects.

| Deferred Sales Tax Repayment | | | |
|------------------------------|----------|------------|------------|
| (\$ in 000s) | | | |
| Fiscal Year | TNB | 520 | Total |
| 2018 | | | \$ - |
| 2019 | \$ 5,760 | | \$ 5,760 |
| 2020 | \$ 5,760 | | \$ 5,760 |
| 2021 | \$ 5,760 | | \$ 5,760 |
| 2022 | \$ 5,760 | \$ 14,356 | \$ 20,116 |
| 2023 | \$ 5,760 | \$ 14,356 | \$ 20,116 |
| 2024 | \$ 5,760 | \$ 14,356 | \$ 20,116 |
| 2025 | \$ 5,760 | \$ 14,356 | \$ 20,116 |
| 2026 | \$ 5,760 | \$ 14,356 | \$ 20,116 |
| 2027 | \$ 5,760 | \$ 14,356 | \$ 20,116 |
| 2028 | \$ 5,760 | \$ 14,356 | \$ 20,116 |
| 2029 | | \$ 14,356 | \$ 14,356 |
| 2030 | | \$ 14,356 | \$ 14,356 |
| 2031 | | \$ 14,356 | \$ 14,356 |
| Total | \$57,600 | \$ 143,563 | \$ 201,163 |

Scenario 2: 5% cut in toll vendor and toll operations budgets

In 2013, the Legislature reduced WSDOT's toll vendor and toll operations budget by 5%. The legislative budget assumes this reduction will be maintained at the same level in the future.

Scenario 2 evaluated the potential impact on toll rates of this 5% budget reduction. The scenario was designed to reflect the scale of reductions that the Legislature frequently considers, to determine the impact on potential toll rates.

Results: This 5% budget reduction could affect tolls by about a nickel. However, the savings is small enough that it could be overshadowed by other changes in traffic or expenditures.

Scenario 3: Another fund source pays preservation costs (R&R)

Preservation or R&R (renewal and replacement) costs are capital costs to preserve or extend the life of a facility, such as resurfacing the bridge deck and replacing key components of the tolling system.

Scenario 3 evaluated the potential impact on tolls if another fund source paid the TNB preservation (R&R) costs.

R&R costs are uneven, due to the nature of the work required in a particular year. For purposes of this study, WSDOT's Olympic Region staff estimated the R&R costs for the bridge as shown below.

Results: If another fund source paid for bridge preservation costs, it could save ten to fifteen cents on the average toll level, but the savings in a particular year might be more or less than that, depending on the amount of preservation work that needed to be done.

- **Current traffic forecast:** Average 11 cent impact
- **Zero growth traffic scenario:** Average 13 cent impact
- **Pessimistic traffic scenario:** Average 14 cent impact

It would be up to the Transportation Commission to decide how to set tolls to accommodate these expenses, whether they're paid by tolls or by other revenue sources.

Policy considerations:

1. **Sets a precedent.** Adopting this policy for the TNB would set a precedent for other facilities.
2. **Cost to other fund source.** For the TNB, it would cost other transportation fund sources \$26.2 million through 2030. If the same policy were adopted for the SR 520 project or other tolled facilities, it would cost additional millions of dollars. The Legislature would have to weigh the cost of paying toll facility preservation costs against other expenditures funded from that revenue source.

| TNB Preservation (R&R) Costs | |
|------------------------------|----------------------|
| Fiscal year | R&R cost |
| FY 2014 | |
| FY 2015 | \$ 119,735 |
| FY 2016 | \$ 4,543,189 |
| FY 2017 | \$ 1,002,473 |
| FY 2018 | \$ 3,078,198 |
| FY 2019 | \$ 12,496 |
| FY 2020 | \$ 118,364 |
| FY 2021 | \$ 2,685,064 |
| FY 2022 | \$ 1,128,348 |
| FY 2023 | \$ 3,436,681 |
| FY 2024 | \$ 47,449 |
| FY 2025 | \$ 2,768,062 |
| FY 2026 | \$ 1,463,344 |
| FY 2027 | \$ 1,903,942 |
| FY 2028 | \$ 720,359 |
| FY 2029 | \$ 599,489 |
| FY 2030 | \$ 2,573,403 |
| | |
| TOTAL | \$ 26,200,595 |

Scenario 4: Tolls pay only debt service, evaluated as a “gift” and a “loan”

Scenario 4 is the first of several larger scenarios, evaluating the potential impact on tolls if another revenue source pays a substantial amount of costs that currently are paid by toll payers.

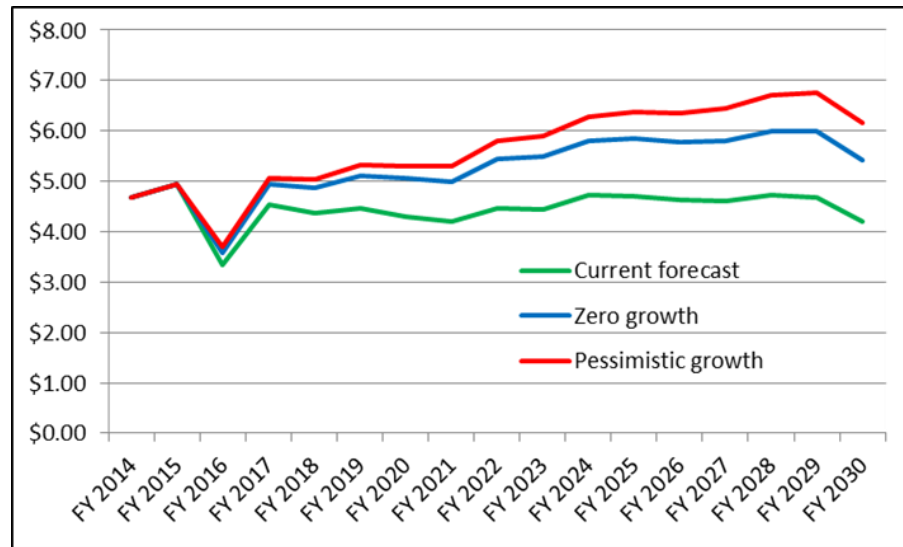
By law, tolls are required to pay debt service, toll vendor and toll operations costs, insurance, maintenance and preservation, and the deferred sales tax. If tolls only paid debt service beginning in FY 2016, another fund source would be required to pay everything else. “Everything else” amounts to 15% to 20% of annual bridge expenses, or between \$12 million and \$22 million a year, for a total of \$276 million.

| | Total Expenditures | Debt Service | Non debt-service expenditures | % non-debt service expenditures |
|---------|-----------------------|-----------------|----------------------------------|---------------------------------------|
| FY 2014 | 66,081,100 | 54,932,000 | 11,149,100 | 17% |
| FY 2015 | 66,003,635 | 54,735,000 | 11,268,635 | 17% |
| FY 2016 | 78,195,493 | 62,311,000 | 15,884,493 | 20% |
| FY 2017 | 82,633,607 | 70,092,000 | 12,541,607 | 15% |
| FY 2018 | 84,673,825 | 69,889,000 | 14,784,825 | 17% |
| FY 2019 | 90,534,392 | 72,861,000 | 17,673,392 | 20% |
| FY 2020 | 90,757,585 | 72,770,000 | 17,987,585 | 20% |
| FY 2021 | 93,253,250 | 72,478,000 | 20,775,250 | 22% |
| FY 2022 | 97,537,281 | 78,093,000 | 19,444,281 | 20% |
| FY 2023 | 101,323,580 | 79,339,000 | 21,984,580 | 22% |
| FY 2024 | 102,313,483 | 83,480,000 | 18,833,483 | 18% |
| FY 2025 | 106,095,426 | 84,301,000 | 21,794,426 | 21% |
| FY 2026 | 104,417,838 | 83,683,000 | 20,734,838 | 20% |
| FY 2027 | 105,470,990 | 84,047,000 | 21,423,990 | 20% |
| FY 2028 | 106,816,868 | 86,325,000 | 20,491,868 | 19% |
| FY 2029 | 101,411,410 | 86,542,000 | 14,869,410 | 15% |
| FY 2030 | 96,765,550 | 79,660,000 | 17,105,550 | 18% |

**Other
funds
would
pay this
\$276
million**

Scenario 4 was evaluated both as a “gift” and a “loan”. As a “gift”, no repayment would be required. As a “loan”, repayment would be required beginning in FY 2031, after all debt service has been paid.

Scenario 4: Could affect tolls by \$1.10 - \$1.45 on average compared to the base case
It would be up to the Transportation Commission to decide the toll levels.



Results: If another fund source paid \$276 million in non-debt service costs through 2030, it could affect the average toll by \$1.10 - \$1.45, depending on the traffic scenario.

- **Current traffic forecast:** \$1.10 average toll savings compared to base case toll
- **Zero growth scenario:** \$1.35 average toll savings compared to base case toll
- **Pessimistic scenario:** \$1.45 average toll savings compared to base case toll

Policy considerations:

1. **Sets a precedent.** Adopting this policy for the TNB could set a precedent for other tolled facilities. Users of other tolled facilities may ask legislators to make similar toll-rate-lowering investments in their facilities.
2. **Cost to motor vehicle account (MVA) or other fund sources.** If this \$276 million were a gift or a loan from the MVA, it would impact other programs and projects funded from the MVA by \$30 million to \$40 million a biennium.

To put this into perspective, \$30 million to \$40 million represents the value of 1 cent to 1.3 cents of gas tax collected in a single year. \$40 million is the amount WSDOT spends on a winter's worth of snow and ice control (plowing, sanding, de-icing and avalanche control). \$40 million also represents 70% of the ferry system's annual fuel budget.

Scenario 4 evaluated as a “loan” from the motor vehicle account

For simplicity purposes, the loan was evaluated as a zero-interest loan. Once debt service is paid off in 2030, a repayment toll would be imposed for a period of years in order to repay the \$276 million loan.

Policy question: What would the repayment tolls repay? It would be a policy question for the Legislature to decide what if any other expenses in addition to the actual loan amount toll payers would be required to pay during the repayment period.

There are five elements of costs in addition to the loan that could be borne by toll payers.

- First are the toll-related costs, the cost of the toll vendor and WSDOT’s toll operations. Since tolls would be imposed during the repayment period, it seems logical to allocate TNB’s share of those toll vendor and operations costs to the TNB toll payers during the repayment period.
- Second are the other bridge-related costs – insurance, maintenance and preservation.

Policy question: How long is the repayment period? It would be another policy question for the Legislature to decide how long the repayment period would be. For purposes of this study, two scenarios were evaluated: a five-year repayment period (FY 2031 – 2035) and a ten-year repayment period (FY 2031 – 2040). The shorter repayment period results in higher tolls, but lower extended costs (toll vendor, operations, insurance, maintenance, preservation) than the longer repayment period. The longer repayment period results in lower tolls but higher extended costs.

Results: To repay the \$276 million loan, if toll payers paid all associated costs (toll- and bridge-related costs), the repayment toll would average between \$2.30 and \$3.70 in a ten-year repayment scenario; and between \$3.70 and \$5.75 in a five-year repayment scenario.

In order to gain average toll savings of \$1.10 to \$1.45 from FY 2016 – 2030, toll payers would pay tolls averaging between \$2.30 and \$3.70 (depending on the traffic scenario) for an additional 10 years, from FY 2031 – 2040; or between \$3.70 and \$5.75 for an additional five years (FY 2031 – 2035).

| Scenario 4: Tolls pay only debt service, FY 2016 – 2030 Loan, with repayment beginning 2031 | | | |
|--|---------------------------------------|------------------------|------------------------|
| | Current traffic forecast | Zero traffic growth | Pessimistic traffic |
| FY 2016 – 2030 loan | \$276 million | | |
| Average toll level impact FY 2016 - 2030 | \$1.10 to \$1.45 of potential savings | | |
| Repayment toll to repay loan* | | | |
| Average repayment toll – 10 years FY 2031 - 2040 | \$2.30 to \$3.70 | | |
| Average repayment toll – 5 years FY 2031 - 2035 | \$3.70 to \$5.75 | | |

*Assumes repayment toll pays all costs – loan, toll vendor and toll operations, insurance, maintenance, and preservation costs. Toll is 20 to 40 cents lower if another fund source pays insurance, maintenance and preservation costs.

Another way to look at Scenario 4 (evaluated as a loan) is shown at right.

In the 10-year repayment scenario, the repayment toll includes the loan, and all toll- and bridge-related costs.

In order to gain average toll savings of \$1.10 to \$1.45 from FY 2016 – 2030, toll payers would pay tolls averaging between \$2.30 and \$3.70 (depending on the traffic scenario) for an additional 10 years, from FY 2031 - 2040.

- **Current traffic forecast:** \$2.30 avg toll
- **Zero-growth scenario:** \$3.10 avg toll
- **Pessimistic scenario:** \$3.70 avg toll

If the repayment toll did not include the bridge insurance, maintenance and preservation costs, the average toll would be 20 to 40 cents lower than the levels shown at above and at right.

| | Loan | Impact on tolls | Repayment, all costs |
|--------------|----------------------|---|----------------------|
| FY 2016 | \$15,884,493 | Toll savings: \$1.10 to \$1.45 savings on average over the 15 years | |
| FY 2017 | \$12,541,607 | | |
| FY 2018 | \$14,784,825 | | |
| FY 2019 | \$17,673,392 | | |
| FY 2020 | \$17,987,585 | | |
| FY 2021 | \$20,775,250 | | |
| FY 2022 | \$19,444,281 | | |
| FY 2023 | \$21,984,580 | | |
| FY 2024 | \$18,833,483 | | |
| FY 2025 | \$21,794,426 | | |
| FY 2026 | \$20,734,838 | | |
| FY 2027 | \$21,423,990 | | |
| FY 2028 | \$20,491,868 | | |
| FY 2029 | \$14,869,410 | | |
| FY 2030 | \$17,105,550 | | |
| FY 2031 | | Repayment toll: \$2.30 to \$3.70 toll on average, over the 10 years | \$47,146,278 |
| FY 2032 | | | \$43,531,418 |
| FY 2033 | | | \$43,118,018 |
| FY 2034 | | | \$43,354,986 |
| FY 2035 | | | \$43,619,061 |
| FY 2036 | | | \$48,747,839 |
| FY 2037 | | | \$45,313,778 |
| FY 2038 | | | \$45,475,723 |
| FY 2039 | | | \$49,090,282 |
| FY 2040 | | | \$45,291,191 |
| TOTAL | \$276,329,579 | | \$454,688,573 |

In the 5-year repayment scenario, the repayment toll includes the loan, and all toll- and bridge-related costs.

In order to gain average toll savings of \$1.10 to \$1.45 from FY 2016 – 2030, toll payers would pay tolls averaging between \$3.70 and \$5.75 (depending on the traffic scenario) for an additional 5 years, from FY 2031 – 2035.

- **Current traffic forecast:** \$3.70 avg toll
- **Zero-growth scenario:** \$4.95 avg toll
- **Pessimistic scenario:** \$5.75 avg toll

If the repayment toll did not include the bridge insurance, maintenance and preservation costs, the average toll would be 20 to 40 cents lower than the levels shown above and at right.

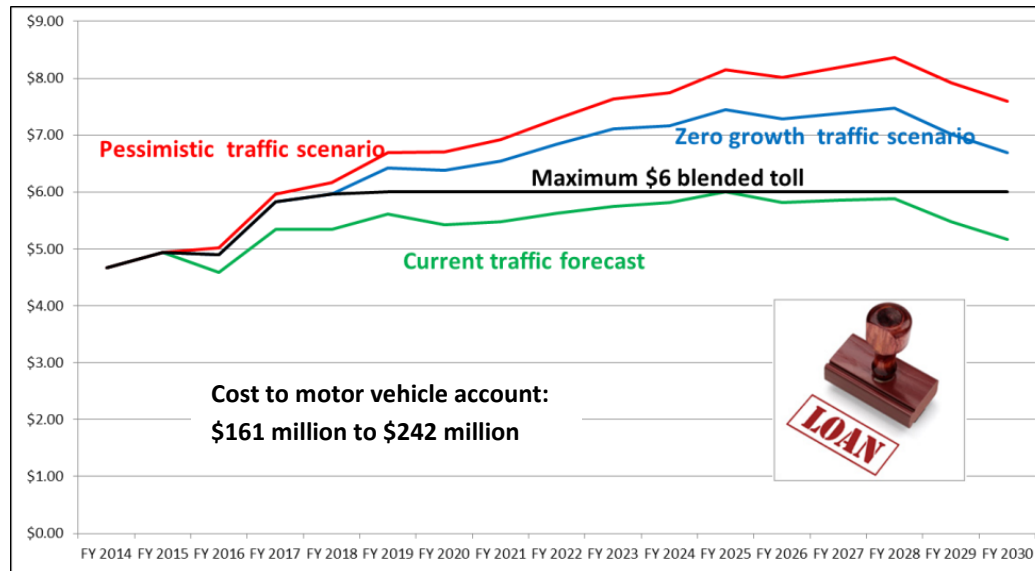
| | Loan | Impact on tolls | Repayment, all costs |
|--------------|----------------------|---|----------------------|
| FY 2016 | \$15,884,493 | Toll savings: \$1.10 to \$1.45 savings on average over the 15 years | |
| FY 2017 | \$12,541,607 | | |
| FY 2018 | \$14,784,825 | | |
| FY 2019 | \$17,673,392 | | |
| FY 2020 | \$17,987,585 | | |
| FY 2021 | \$20,775,250 | | |
| FY 2022 | \$19,444,281 | | |
| FY 2023 | \$21,984,580 | | |
| FY 2024 | \$18,833,483 | | |
| FY 2025 | \$21,794,426 | | |
| FY 2026 | \$20,734,838 | | |
| FY 2027 | \$21,423,990 | | |
| FY 2028 | \$20,491,868 | | |
| FY 2029 | \$14,869,410 | | |
| FY 2030 | \$17,105,550 | | |
| FY 2031 | | Repayment toll \$3.70 - \$5.75 on average, over the five years | \$74,779,235 |
| FY 2032 | | | \$71,164,376 |
| FY 2033 | | | \$70,750,976 |
| FY 2034 | | | \$70,987,944 |
| FY 2035 | | | \$71,252,018 |
| TOTAL | \$276,329,579 | | \$358,934,550 |

Scenario 5: Loan to achieve a maximum \$6.00 blended toll

When the bridge was originally financed in 2002, the maximum toll envisioned at that time was \$6.00. Tolls were to start at \$3.00, and increase by \$1.00 every three years until hitting \$6.00 in FY 2016, where they were to remain until the debt was paid off in 2030.

Scenario 5 evaluated what size of loan it might take to offset TNB costs such that the maximum blended toll rate did not exceed \$6.00.

Scenario 5: Loan to achieve a maximum \$6 blended toll



Results: Scenario 5 only affects the zero-growth and pessimistic traffic scenarios, because in the current traffic forecast, the blended toll does not exceed \$6.00. It would take a loan of between \$161 million and \$242 million to keep blended tolls below \$6.00 in the zero traffic growth and pessimistic traffic scenarios, which would achieve average blended toll savings of 80 cents to \$1.30 through FY 2030.

| Scenario 5: Maximum blended toll \$6.00, FY 2016 – 2030 Loan, with repayment beginning 2031 | | | |
|--|-----------------------------|--|------------------------|
| | Current traffic forecast | Zero traffic growth | Pessimistic traffic |
| FY 2016 – 2030 loan | NA | \$161 million to \$242 million | |
| Average toll level impact FY 2016 - 2030 | NA | 80 cents to \$1.30 of potential average savings | |
| Repayment toll to repay loan* | | | |
| Average repayment toll – 10 years, FY 2031 - 2040 | NA | \$2.05 to \$3.15 average toll | |
| Average repayment toll – 5 years, FY 2031 - 2035 | NA | \$3.05 to \$5.00 average toll | |

* Assumes repayment toll pays all costs – loan, toll vendor and toll operations, insurance, maintenance, and preservation costs. Toll is 20 to 40 cents lower if another fund source pays insurance, maintenance and preservation costs.

| Loan to achieve maximum \$6.00 loan -- zero traffic growth | | |
|--|-----------------------|-----------------------|
| Loan | Impact on tolls | Repayment, all costs |
| FY 2014 | | |
| FY 2015 | | |
| FY 2016 | | |
| FY 2017 | | |
| FY 2018 | | |
| FY 2019 | | |
| FY 2020 | | |
| FY 2021 | | |
| FY 2022 | | |
| FY 2023 | | |
| FY 2024 | | |
| FY 2025 | | |
| FY 2026 | | |
| FY 2027 | | |
| FY 2028 | | |
| FY 2029 | | |
| FY 2030 | | |
| FY 2031 | | \$ 35,594,957 |
| FY 2032 | | \$ 31,980,097 |
| FY 2033 | | \$ 31,566,697 |
| FY 2034 | | \$ 31,803,665 |
| FY 2035 | | \$ 32,067,740 |
| FY 2036 | | \$ 37,196,518 |
| FY 2037 | | \$ 33,762,457 |
| FY 2038 | | \$ 33,924,402 |
| FY 2039 | | \$ 37,538,961 |
| FY 2040 | | \$ 33,739,870 |
| TOTAL | \$ 160,816,369 | \$ 339,175,363 |

| Loan to achieve maximum \$6.00 loan -- pessimistic traffic | | |
|--|-----------------------|-----------------------|
| Loan | Impact on tolls | Repayment, all costs |
| FY 2014 | | |
| FY 2015 | | |
| FY 2016 | | |
| FY 2017 | | |
| FY 2018 | | |
| FY 2019 | | |
| FY 2020 | | |
| FY 2021 | | |
| FY 2022 | | |
| FY 2023 | | |
| FY 2024 | | |
| FY 2025 | | |
| FY 2026 | | |
| FY 2027 | | |
| FY 2028 | | |
| FY 2029 | | |
| FY 2030 | | |
| FY 2031 | | \$ 43,763,206 |
| FY 2032 | | \$ 40,148,346 |
| FY 2033 | | \$ 39,734,946 |
| FY 2034 | | \$ 39,971,914 |
| FY 2035 | | \$ 40,235,989 |
| FY 2036 | | \$ 45,364,767 |
| FY 2037 | | \$ 41,930,706 |
| FY 2038 | | \$ 42,092,651 |
| FY 2039 | | \$ 45,707,210 |
| FY 2040 | | \$ 41,908,119 |
| TOTAL | \$ 242,498,857 | \$ 420,857,854 |

The table to the left shows the potential toll savings from FY 2019 – 2030 resulting from a loan to keep the maximum blended toll at \$6.00 or less. It also shows the repayment toll, assuming a 10-year repayment schedule and the repayment toll pays all toll- and bridge-related costs.

The top table shows that under the zero traffic growth scenario, in order to achieve an 80 cent average toll savings from FY 2019 – 2030, toll payers would have to pay a toll of \$2.05 for another ten years (FY 2031 – 2040). If the repayment toll were for five years, the repayment toll would average \$3.45 from FY 2031 to 2035.

The lower table shows that under the pessimistic traffic scenario, in order to achieve a \$1.30 average toll savings from FY 2018 – 2030, toll payers would have to pay a toll of \$3.05 for another ten years (FY 2031 – 2040). If the repayment toll were for five years, the repayment toll would average \$5.00 from FY 2031 to 2035.

Policy considerations:

- Sets a precedent.** Adopting this policy for the TNB could set a precedent for other tolled facilities. To the extent other tolled facilities have tolls in excess of \$6.00 per round trip, users of those facilities may ask legislators to make similar toll-rate-lowering investments in their facilities.
- Cost to motor vehicle account (MVA) or other fund sources.** Scenario 5 would cost the MVA or other fund sources \$161 million to \$242 million through FY 2030.
 - In the zero growth traffic scenario, the loan ranges from \$11 to \$39 million a biennium.
 - In the pessimistic traffic scenario, the loan starts at \$2.1 million in FY 2018, and then ranges from \$18 million to \$56 million a biennium.

To put this cost into perspective, the biennial loan would be the equivalent of the following transportation appropriations:

- WSDOT's structural bridge repair program -- \$10 million
- WSDOT's stormwater costs -- \$20 million
- WSDOT's pavement maintenance -- \$30 million
- A winter's worth of snow and ice control, or 70% of a year's worth of ferry fuel -- \$40 million
- The state contribution to WSDOT's preservation program -- \$50 million

Scenario 6: Loan for level debt service

When structuring financing for tolled facilities, the State Treasurer's current practice is to strive for level debt service, rather than the escalating debt service is the case for the TNB. Scenario 6 was designed to mimic the Treasurer's current practice. It identifies the size of a loan that would be required to offset the effect of increasing TNB debt service after FY 2016.

Results: A loan of \$231 million would be required under any of the three traffic scenarios to mimic the effect of level debt service on TNB toll payers.

| Scenario 6: Level debt service, FY 2016 – 2030 Loan, with repayment beginning 2031 | | | |
|---|---------------------------------------|------------------------|------------------------|
| | Current traffic forecast | Zero traffic growth | Pessimistic traffic |
| FY 2017 – 2030 loan | \$231 million | | |
| Average toll level impact FY 2017 - 2030 | \$1.00 to \$1.30 of potential savings | | |
| Repayment toll to repay loan* | | | |
| Average repayment toll – 10 years FY 2031 - 2040 | \$1.90 to \$3.00 | | |
| Average repayment toll – 5 years FY 2031 - 2035 | \$3.10 to \$4.75 | | |

* Assumes repayment toll pays all costs – loan, toll vendor and toll operations, insurance, maintenance, and preservation costs. Toll is 20 to 40 cents lower if another fund source pays insurance, maintenance and preservation costs.

The table at right shows the potential toll savings from FY 2017 – 2030 resulting from a loan to mimic the effects of level debt service beginning in FY 2016.

It shows that in order to achieve average toll savings of \$1.00 and \$1.30 from FY 2017 – 2030 depending on the traffic scenario, toll payers would have to pay tolls of \$1.90 to \$3.00 for another ten years, from FY 2031 – 2040, depending on the traffic scenario.

This repayment includes all toll- and bridge-related costs. If the repayment period were for 5 years, the repayment toll would average between \$3.10 and \$4.75.

Policy considerations: The biennial loan amounts would range from \$15 million to \$56 million, with a resulting impact on programs and projects funded from the MVA. This would be the equivalent of most of WSDOT's stormwater costs (\$20 million), up to an amount in excess of the biennial state contribution to WSDOT's preservation budget (\$50 million).

| Level debt service -- all traffic scenarios | | | |
|---|-----------------------|---|----------------------|
| | Loan | Impact on tolls | Repayment, all costs |
| FY 2014 | | | |
| FY 2015 | | | |
| FY 2016 | | | |
| FY 2017 | \$ 7,781,000 | Toll savings: \$1.00 to \$1.30 average toll savings over 14 years | |
| FY 2018 | \$ 7,578,000 | | |
| FY 2019 | \$ 10,550,000 | | |
| FY 2020 | \$ 10,459,000 | | |
| FY 2021 | \$ 10,167,000 | | |
| FY 2022 | \$ 15,782,000 | | |
| FY 2023 | \$ 17,028,000 | | |
| FY 2024 | \$ 21,169,000 | | |
| FY 2025 | \$ 21,990,000 | | |
| FY 2026 | \$ 21,372,000 | | |
| FY 2027 | \$ 21,736,000 | | |
| FY 2028 | \$ 24,014,000 | | |
| FY 2029 | \$ 24,231,000 | | |
| FY 2030 | \$ 17,349,000 | | |
| FY 2031 | | Repayment toll: \$1.90 to \$3.00 on average, over 10 years | \$ 40,833,920 |
| FY 2032 | | | \$ 37,219,060 |
| FY 2033 | | | \$ 36,805,660 |
| FY 2034 | | | \$ 37,042,628 |
| FY 2035 | | | \$ 37,306,703 |
| FY 2036 | | | \$ 42,435,481 |
| FY 2037 | | | \$ 39,001,420 |
| FY 2038 | | | \$ 39,163,365 |
| FY 2039 | | | \$ 42,777,924 |
| FY 2040 | | | \$ 38,978,833 |
| TOTAL | \$ 231,206,000 | | \$391,564,994 |

Scenario 7: What is the likelihood of double digit tolls? Not much.

This final scenario evaluated the potential for double digit blended toll rates. What is the likelihood that the blended toll rate will exceed \$10.00 before debt service is paid off in 2030?

Results: While the potential exists, the evaluation yielded some very unlikely scenarios. As a result, unlikely the blended toll will reach \$10.00 or more. While the cash toll or the Pay by Mail toll may exceed \$10.00, the blended rate is unlikely to do so.

The following three unlikely scenarios yielded double digit tolls:

1. **Extreme traffic drops.** If traffic fell by 2% every year between FY 2016 and 2030, the blended toll rate may exceed \$10.00 in FY 2028. This unlikely level of traffic decline would yield traffic of 9.9 million trips in 2030 – another 2 million below the pessimistic scenario evaluated in this study.
2. **Extreme inflation and falling traffic.** Under the pessimistic traffic scenario, if inflation was 9% each year from FY 2016 – 2030, the blended toll may exceed \$10.00 in the last three years of debt service (FY 2028 – 2030). This unlikely scenario would yield non-debt service costs that are 250% higher in 2030 than in the base case, or \$43 million as compared with \$17.1 million. In FY 2014, the TNB's non-debt service costs are \$11.1 million.
3. **A combination of high traffic declines and high inflation.** A combination of 1.5% annual traffic drop and 5% annual inflation would yield blended toll rates above \$10.00 in FY 2028. This unlikely scenario doubles the annual traffic decline in the pessimistic scenario evaluated above, and more than doubles the inflation rate used in this study.